February, 1949

EDISON ELECTRIC INSTITUTE BULLETIN

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PUBLISHED MONTHLY BY EDISON ELECTRIC INSTITUTE

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

November, 1947-1948

SOURCE AND DISPOSAL OF ENERGY—MONTH OF NOVEMBER

	1948	1947	%
GENERATION* (Net)			
By Fuel Burning Plants	17,588,238,000	15,749,485,000	+11.7
By Water Power Plants	6,581,083,000	6,087,948,000	+ 8.1
Total Generation	**24,169,321,000**	**21,837,433,000**	**+10.7**
Add—Net Imports Over International Boundaries	59,900,000	76,830,000	−22.0
Less—Company Use	119,607,000	131,207,000	− 8.8
Less—Energy Used by Producer	297,365,000	279,155,000	+ 6.5
Net Energy for Distribution	**23,812,249,000**	**21,503,901,000**	**+10.7**
Losses and Unaccounted for	3,134,634,000	2,777,743,000	+12.8
Sales to Ultimate Customers	**20,677,615,000**	**18,726,158,000**	**+10.4**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of November 30th			
Residential or Domestic	33,400,960	31,469,541	+ 6.1
Rural (Distinct Rural Rates)	1,684,469	1,505,100	+11.9
Commercial or Industrial:			
Small Light and Power	5,126,134	4,948,279	+ 3.6
Large Light and Power	205,467	191,025	+ 7.6
Other Customers	140,915	134,995	+ 4.4
Total Ultimate Customers	**40,557,945**	**38,248,940**	**+ 6.0**
KILOWATTHOUR SALES—During Month of November			
Residential or Domestic	4,495,004,000	3,876,006,000	+16.0
Rural (Distinct Rural Rates)	487,031,000	382,314,000	+27.4
Commercial or Industrial:			
Small Light and Power	3,650,921,000	3,346,373,000	+ 9.1
Large Light and Power	10,673,159,000	9,757,170,000	+ 9.4
Street and Highway Lighting	251,148,000	233,716,000	+ 7.5
Other Public Authorities	540,481,000	501,638,000	+ 7.7
Railways and Railroads:			
Street and Interurban Railways	325,057,000	359,275,000	− 9.5
Electrified Steam Railroads	207,050,000	218,568,000	− 5.3
Interdepartmental	47,764,000	51,098,000	− 6.5
Total to Ultimate Customers	**20,677,615,000**	**18,726,158,000**	**+10.4**
Revenue from Ultimate Customers	**$375,038,200**	**$335,687,200**	**+11.7**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended November 30th			
Kilowatthours per Customer	1,551	1,426	+ 8.8
Average Annual Bill	$46.69	$44.21	+ 5.6
Revenue per Kilowatthour	3.01¢	3.10¢	− 2.9

(*) By courtesy of the Federal Power Commission.

Vol. 17, No. 2, EDISON ELECTRIC INSTITUTE BULLETIN; published monthly. Entered as second-class matter Aug. 17, 1933, at the post office at Philadelphia 2, Pa., under the act of March 3, 1879. Publication office, 56th and Chestnut Sts., Philadelphia 39, Pa. Editorial office, 420 Lexington Ave., New York 17, N. Y. Subscription rate $2.00 per year in the United States; $3.00 per year in foreign countries.

The Edison Electric Institute does not assume responsibility for, nor necessarily endorse or approve, statements made by contributors to the BULLETIN.

Thomas A Edison
January 15 1882.
FROM SITTING AT
104 GOERICK ST

EDISON ELECTRIC INSTITUTE BULLETIN

Volume 17 FEBRUARY, 1949 No. 2

Nation Pays Homage to Edison's Genius On 102nd Anniversary

IN exercises and special programs throughout the United States and many foreign countries, industrial, scientific and civic leaders paid tribute to the genius of Thomas Alva Edison on the 102nd anniversary of his birth, Feb. 11, 1949, and acknowledged modern society's debt to the unique inventiveness of his mind.

Architect of Modern Industrial State

Mr. Edison was characterized as "one of the principal architects of the modern industrial state, the best example of which is this country in which we live," in a statement by Vice-Admiral Harold G. Bowen, executive director of the Thomas Alva Edison Foundation, which was echoed in the "Edison Day" proclamations of the Governors of many states, who also urged greater recognition of Edison's contributions to America's scientific and industrial progress.

Special Edison Day Events

Special Edison Day events were featured in many community programs and also in the anniversary celebrations of electric utility companies and business and civic organizations. Among the varied groups which participated in Edison Day were banks, railroads, insurance companies, camera and glass manufacturers, textile mills, office appliance dealers, electrical appliance manufacturers and mineral and chemical companies.

Extensive newspaper and display advertising highlighting Edison's career and achievements was sponsored by electric light and power companies, among whom were represented The Detroit Edison Company, The Dayton (Ohio) Power and Light Co., Delaware Power and Light Co., Long Island Lighting Co., South Carolina Power Co., Toledo Edison Co., Virginia Electric and Power Co. and the Public Service Corp. of New Jersey. South Carolina Power and Toledo Edison also presented radio programs devoted to Edison's life history and his favorite songs.

Other Celebrations

The General Electric Company plants at Nela Park, Ohio, and Schenectady, N. Y., conducted special activities as did other G. E. plants throughout the country. Nela Park entertained some 4000 school children who toured the laboratories there during the week of Feb. 11. A dinner was given at Schenectady in honor of a number of Edison Pioneers. The original whistle of the Edison Electric Company, which had its plants there, was borrowed for the occasion from Henry Ford's Greenfield Village and was tooted by means of compressed air.

Thomas A. Edison Incorporated, the company which the inventor founded, Monroe Calculating Machine Company and a varied group of other businesses and industries participated in a community program in the West Orange, N. J., area.

The Seattle (Wash.) Chamber of Commerce presented an Edison's Birth-

A Note on the Edison Portrait

The portrait of Thomas A. Edison, appearing as the frontispiece in this issue of the BULLETIN, was lithographed from a pencil drawing which has recently come into the possession of the Edison Electric Institute. The drawing was made by the late James Edward Kelly, an American artist and sculptor of considerable standing, on Jan. 15, 1882, at a time when Edison was concentrating all his energies on the construction of the Pearl Street Station in New York and its underground distribution system. Mr. Edison was 35 at the time this unusually striking study was made.

The artist, Mr. Kelly (1855-1933), is best known for his Monmouth Battle Monument in Freehold, New Jersey, and several busts of Thomas A. Edison, one of which was purchased by Henry Ford for his collection. As a young newspaper artist, Mr. Kelly was assigned by his editors to make sketches of Edison as early as 1878 at the Menlo Park laboratory. Edison, who became a close friend and one of Mr. Kelly's favorite subjects for sculpture, once posed for an anonymous decorative figure in one of the artist's larger pieces.

The Institute has a number of extra prints of the portrait, with larger margins, suitable for framing, and will be glad to send a copy for such purpose upon request.

15th Annual EEI Sales Conference

Edgewater Beach Hotel, Chicago, Ill.

April 4-7, 1949

Featuring:

- **An all-day meeting for home service personnel, Monday, April 4th**
- **Four individual sessions on Residential, Rural, Commercial and Industrial sales, Tuesday, April 5th**
- **General Sessions, with selected speakers covering problems of major importance to the commercial future of our industry, Wednesday, April 6th, and the morning of Thursday, April 7th**
- **Luncheon session, with an address by a nationally-known speaker, Thursday, April 7th**

Make reservations immediately with P. J. Weber, Resident-Manager Edgewater Beach Hotel.

day Program, at which Dr. W. I. Patnode of the Richland atomic project, was principal speaker. More than 200 civic and business leaders attended the luncheon. In addition, the Chamber's regular Friday evening broadcast, "Seattle Story," dramatized the earliest use of electric lighting in Seattle.

"The Incandescent Light" Published

The Edison Pioneers luncheon which has been held annually for more than 30 years on Feb. 11, the inventor's birthday anniversary, featured Dr. C. G. Suits, Vice-President and Director of the General Electric Research Laboratory, as principal speaker. Dr. Karl T. Compton, Chairman of the Research and Development Board of the National Military Establishment and Chairman of the Corporation, Massachusetts Institute of Technology, was elected an Honorary Member of the association.

Concurrently with these nation-wide activities, The Thomas Alva Edison Foundation announced publication of "The Incandescent Light," an illustrated book of 80 pages which is the first in a projected series of studies, each to deal with one of Edison's major inventions. This book contains a detailed account, drawn from Edison's laboratory notebooks, of how he succeeded in inventing the first commercially practical incandescent lamp in 1879 when so many others had failed.

Laboratory Notebooks Analyzed

The proposed series is part of a program conducted by the Foundation investigating industrial research methods which should prove of great value to industry. The first work in this direction will be an analytical study of the approximately 2500 laboratory notebooks and other records kept by Edison and his men to determine what techniques of research he used to make his efforts so productive. "The Incandescent Light" represents the first tangible result of work done on this project.

"The Edison Method" Described In His Own Words

This study is divided into four major sections: Early Developments, describing the progress made by Edison's predecessors; Edison's Work, describing his repeated experiments, formation of the Edison Electric Light Co., and the successful invention; Advances Since 1882, relating the development of the electric light until the present day; and a final section headed "The Edison Method," describing in Edison's own words the seven basic components necessary to a system providing electricity to light a modern city, as he first visualized it.

The book was prepared by Floyd A. Lewis, electrical engineer, editor and writer in collaboration with curator Norman R. Speiden and other members of the Foundation staff under the general guidance of Vice Admiral H. G. Bowen, retired Chief of the Office of Naval Research.

National Trends

By Frank E. Holman
President of the American Bar Association

Excerpts from an address before the 30th Mid-Winter Trust Conference of the American Bankers Association in New York City, February 9, 1949

IN these days of confused thinking when minority pressure groups are trying to change the form and structure of our government, it may be worthwhile to consider some of the trends that have been operating during recent years in our national life.

In the national picture it seems to me that certain trends in law, in government, in education and in business, are more or less self-evident, and that all these trends may be characterized as materialistic in the sense that they stem from policies of expediency and have for their object private material gain and comfort rather than the preservation of political, moral, or educational standards.

Americans have the highest state of material living in the world, the highest wages, the best working conditions, and the most leisure, but their personal and political thinking is chiefly concerned with the material things of life. They have lost interest in the philosophy of sound government.

Up to a few years ago we had what was known as a representative and constitutional commonwealth — a republic. Contrary to much of the present-day talk, it was not a democracy but a republic, a government of law—law stabilized by constitutional guarantees and precedents under such checks and balances that the life, liberty, and property of the citizen were protected against the transitory feelings and economic views of a particular majority, or of favored groups.

"Republic" or "Democracy"

But the tendency has grown in recent years to substitute the word "democracy" for that of "republic" and thereby negate the fact that our forefathers established and intended to establish a republic and not a democracy. In a democracy, a temporary political majority, or combination of groups, by their vote and the sheer force of numbers may impose upon one class of the community regulations and rules of conduct and even taxation different from that imposed upon another class of the community. The fundamental idea of a republican form of government is that by constitutional guarantees and by the certainty and uniformity of law applicable to all persons and classes, no special privileges or immunities shall accrue to any citizen or class of citizens whether it be labor, or agriculture, or business; and no burdensome regulations like taxes and other impositions shall be imposed upon one class of citizens as, for example, business and not upon another class as, for example, labor unions.

We may say very definitely that one trend in law and government in this country during the last few years has been to abandon the republican form of government and substitute a welfare type of government. In this connection certain specific trends or tendencies may be noted.

Fictitious Equality

The founders of the republic declared "that all men are created equal" but by this principle they did not mean that all persons, even in the country as it then existed, and certainly not in a country of 140,000,000 or more people, were, or could be, assured equal mental and physical power and hence an equal social or economic position. The purpose of the announcement "that all men are created equal" was not to create a fictitious equality, social or economic, but to permit any inequalities to rest solely on the basis of actual differences in personality and ability.

Now we have before us the phenomenon by which through government fiat and legislative policy it is sought to level out all inequalities so that the thrifty and the improvident, the industrious and the shiftless, shall be made equal by government fiat. We have trended so far in this direction, as pointed out some time ago by Donald R. Richberg—himself an acknowledged liberal—that we have almost a cult claiming not mere equality of opportunity but "superior rights" where time-worn ideas of self-reliance, self-support, and self-discipline are not encouraged because pressure groups expect to be taken care of by the government upon an equal basis with the citizens who strive and work.

In our original concept of government there were incorporated certain principles of freedom. We were not only guaranteed freedom of speech (both of the individual and of the press) and freedom of religion, but most important of all, freedom of individual initiative. As Justice Brandeis put it, "Freedom to be let alone." But this individual freedom has now been lost in a maze of bureaucratic controls. Bureaucracy has superseded our constitutional processes. Instead of developing the law by the legislative and judicial process, the law is largely originated, made, interpreted, administered, and enforced by executive boards, and the legislative and judicial branches of government are largely bypassed.

Another definite trend concerns itself with the attitude of many congressmen and senators, and the attitude of the public with respect to their position and duty. Congressmen and senators tend more and more to act and vote not in accord with their own best judgment as the public servants of all, but in accord with the most recent Gallup or other public poll, or in accord with what they find in their mail-bag in the way of letters and telegrams from pressure groups. Congressmen and senators openly seek public approval and election and re-election upon the basis of having voted in behalf of pressure groups—social, racial or economic.

"Liberals" Deny Liberty

The very words of our common vocabulary, out of the mouths of our new officialdom, have come to have new and trick meanings. One is now classified as a "liberal" who instead of believing in liberty consistently seeks to restrict liberty by an extension of the powers of government. He is a liberal who wishes to extend governmental powers at the expense of individual freedom. One who loves and wants to help his own country is often not considered so good a patriot

as one who wants to help other countries first.

Catch-Phrase Politics

The American people have become the victims of slogans and catch phrases. We had the "Square Deal," then the "New Deal," and now the "Fair Deal" —all avowing faith in the American system of free enterprise and constitutional and representative government but always moving toward and supporting a welfare and highly centralized type of government which is inevitably leading the American people into a collectivist economy and form of government. We follow banners emblazoned with catch phrases without thinking what they mean or how they affect the basic principles of our form of government.

Prosperity, instead of being a process for developing and increasing wealth, is advocated as best achieved by a program which actually wastes wealth. A huge national debt is asserted to be an aid to national prosperity. The traditional view of public finance was that government expenditures should be made as prudently as possible, with the budget generally in balance, and the debt kept at a minimum. According to the old view, a continually unbalanced budget and a rapidly rising public debt imperil not only the financial stability of the nation, but the financial and social well-being of every person in the country. However, a few years ago a new philosophy developed in Washington as to the public debt; to wit: the doctrine that a huge public debt is, in fact, a national asset rather than a liability, and that deficit spending is actually a stimulus to the prosperity of the nation.

Taxation for Subsidies

Taxation, instead of being for the cost and expense of government, is now employed as a social instrumentality for the taking of one man's substance and dividing it among others for promoting some social or economic ideology. A subsidy, whether to farmers or business, instead of being recognized as a government aid or payment, is used as a device to obscure the true cost of commodities and to a large extent, along with government spending, is responsible for our present inflation.

A government bond is not considered as an evidence of government indebtedness, but as a government credit upon which to base the issuance of money.

In the international field we have always been victimized by catch phrases—"making the world safe for democracy," "one world or none," and "the four freedoms."

The so-called "four freedoms" was the greatest political catch phrase of all. The elephant in the zoo has all the four freedoms. He has freedom from want, for he is fed regularly; he has freedom from fear, for his natural enemies, the lions and tigers are in separate cages; he has freedom of speech, for he can trumpet whenever he wishes; he has freedom of belief, for he can think anything he likes. But he lacks the most important freedom of all—the freedom of individual initiative. It is this freedom of initiative and freedom from arbitrary control by government which is the basic freedom of free men.

Political Immorality

Such political immoralities, without mentioning others which could be listed, should long since have been sufficient to shock the public conscience and rebuke the trend and restore political morality. But the mass of our people, at least the mass of the voting public, seems not to be interested in the basic theory of government or in basic political morality as long as they are participating in the fruits of a welfare type of government. Hence, one trend most destructive to the Constitution and representative government is the attitude of the people in failing to insist that our officials speak and act in accordance both with the principles of good morals and the principles of sound government, and that when they fail to do so, however engaging their personalities, that they be called to account.

Look all about you, and you will find we have exchanged our heritage of freedom and abandoned the simple virtues and faith of our fathers for a welfare type of government.

This has been sponsored by social and economic pressure groups, ostensibly in the interest of such slogans as the "common man," "social justice," etc. and has been picked up and utilized by politicians as a good vote-getting program. *This has been true of the leaders of both political parties.* To prove it you only have to read the speeches of either candidate in the last national campaign.

The politician's conception of the rights of the common man and of social justice is to make the common man a ward of the state, dependent upon the state for his social and economic well-being rather than on his own effort and ability. This common man, therefore, is not a free man and cannot possibly be free under such a philosophy. He may have food and raiment, but he will not have freedom. Man does not live by bread alone, and in his rise from the animal state or barbarism he has been motivated chiefly by the opportunity of individual advancement and achievement, the need to strive for himself.

Paternalism in Education

Other forms of paternalism are on the way. Bills on several occasions have been introduced in the Congress to allot large sums to be spent for public education. It is now asserted that the public poll favors such legislation. Such an allotment of federal funds to the states can only mean that Washington henceforth will direct and supervise matters of education throughout this country—both policy and content. The power of the purse is always the power of control, and as soon as states have their public school systems geared to these federal education expenditures, it will be simple indeed for Washington to dictate policies in education, and our free educational system will be gone.

What are the trends in the field of business? Since the depression business has been adverse to standing on its own feet and maintaining its traditional independence as free enterprise. First of all, business readily fell in with the New Deal concept of the NRA and the Blue Eagle. It may be said that this matter constitutes ancient history—but it represents the significant beginning of the present trend where business, more than ever before in the history of the country, turns to Washington for help.

Business and business men have now, in many instances, made themselves the wards of government. Furthermore, the independence of business and the very existence of free enterprise is now threatened by the fact that the national government is in business on its own account in a way and to an extent not often realized by the general public.

Growth of Government Corporations

The Federal Government has organized and operates over 50 corporations having assets of over $25,000,000,000, which sum is 40 times as great as our biggest public utility; 10 times as great as our biggest railroad; 10 times our biggest industrial company; and about twice the value of all farm buildings in the United States. Of these government corporations many are not even incorporated under acts of Congress, but gov-

(*Continued on page* 58)

Personnel and Public Relations in Electric and Gas Utilities

By Orie Van Rye

Personnel Administration Counsel, New England Power Service Company

An address before the New England Regional Conference of the Public Utility Advertising Association, Boston, Mass., February 3, 1949

SEVERAL years ago, the American Management Association held an annual meeting in Boston devoted entirely to the methods of improving human relations in industry. In the afternoon of the second day, during one of the question periods, a member of the audience asked, "Would those who attended A.M.A. meetings held 20 years ago, please raise their hands?" A surprisingly large number of hands were raised. He then asked those that raised their hands to verify the fact that exactly 20 years ago the same subjects were discussed and again and again in subsequent meetings throughout the years.

After pointing to the lack of progress in this field, he came to the conclusion that the trouble was that "We are talking to ourselves." The people who go to Industrial Relation Conferences are those who are most aware of the great need for improvement in the field of human relations. The people who lack the realization that today modern management requires the qualifications, attributes and traits *essential* to optimum administration of human relations in industry are conspicuous by their absence.

Talking To Ourselves

This man was voicing the lament of personnel men everywhere. The trouble was that his courage gave out and he failed to say that unless management gave something more than lip service and actually translated into action the things they profess to believe in, we could look forward to many more years of *"talking to ourselves."*

Pertinent in this connection are the penetrating comments made in the A.M.A. report entitled "Management Appraises Its Job," which states "if we are to implement our beliefs, if we are to act in accordance with the truths that we see clearly, then in the selection of our managers we must subordinate all else to the element of human understanding. We must pose as the *first* and *decisive* consideration, the revelation by any candidate for managerial office of at least latent ability to comprehend human motivation and conduct in industrial society and to apply this knowledge to the continuingly effective utilization of people for achievement of the company's objectives."

Those are potent phrases if you will consider the source. "We must subordinate all else"—"the first and decisive consideration." Needless to say, this report was hailed with considerable joy by all those engaged in personnel work. Here at last was full recognition of what has always been recognized as an almost insurmountable roadblock in the path of progress in the field of industrial relations. This report was issued in 1946. I am afraid that we were too optimistic.

Personnel Work Tools

Whenever personnel men get together for a bull session and really let their hair down they will usually discuss with some pride the tools they have fashioned:—the employee and supervisor's manuals, information bulletins, training and educational programs, employee testing, rating and induction procedures. One or two will boast of having obtained one of the goals of all personnel men, the full and sincere backing of their top management.

And then, the cynic of the group will ask the inevitable question: "Are these tools, for which so much money and time are expended, accomplishing their objectives?" And the answers will become evasive. Definitely, yes, on the tools for selective hiring, rating of employees, employee training and educational programs, but as to effective two-way communications and improvements in human relations, although they shy away from a flat "no", the answers sound suspiciously like alibis. They run something like this: "Rome wasn't built in a day." "You can't teach old dogs new tricks." "We have to wait until some of the men in various levels of management retire." "It will take a long time because behavior patterns of a lifetime are not easily changed." All these, however, add up to one conclusion—an accusing finger pointed at all levels of management.

I say this at the risk of incurring some resentment, for you who are here today represent all levels of management. This, however, may be called a calculated risk. If your reaction is the same as the usual audience listening to someone speak on the subject of human relations, I know you will tell yourself that he is talking about the other fellow. Or you will protest and say—"I *do* believe in having good human relations." "I want my employees to respect and like me." "I believe in the Golden Rule." And it is also *my* belief that most of you really do.

Then what *is* the trouble? The trouble is that there exists a wide gap between beliefs and conduct. This gap may be compared to the gap that exists between our religious beliefs and our actions.

Judging By What Ought to Be

Recently a nationwide survey was made to determine "how real is the religious faith that underlies our democracy." The survey disclosed that 95 per cent of the American people think that they believe in God. To the question "Do you ever pray?" 90 per cent answered "Yes." The 64-dollar question was phrased this way: "Among the people you come in contact with, how far would you say most of them go in following the idea of love of fellow men?" A huge majority, 82 per cent agreed that *other people* went only part way.

The results of this survey were analyzed by three prominent churchmen and they came to these conclusions:

"The whole history of human self-righteousness proves that man always judges himself *not* from the standpoint of what he does, but from the standpoint of *his knowledge* of what he ought to do."

Still another reason for the existence of this gap between belief and conduct may be due to the fact that in our highly technical business we have chosen our managers, superintendents and supervisors almost exclusively on the basis of *technical* proficiency and knowledge. Add to this a natural inertia induced by a lifetime behavior pattern which did not recognize the need for the managerial attributes that are now required for the administration of human relations. Many thoughtful hours are spent on how to obtain the Nth degree of efficiency out of their plants and equipment but little time is given to *knowing* and *understanding* the workers operating the plants and equipment.

The "Realistic" Approach

Another obstacle is the fact that to some people the term industrial relations means only one thing, the annual battle between union representatives chosen by employees, and the representatives of the company. The competence of the representatives of the company is measured by what success they may have had in making a reasonable settlement of what in many cases are unreasonable demands. This is called the realistic approach.

The principal argument for such reasoning is that unions thrive on the human selfishness inherent in all of us and that only through the union leader's success at the bargaining table can he justify his job. To refute this argument it should be sufficient to say that you know companies that have proved this to be wrong. Those who attended the General Electric Company's presentation of their new 9-point program at the recent New England Council meeting, know that one of the largest companies in the nation is convinced that this reasoning is wrong.

It is my opinion that the tools that have been fashioned by the personnel men are excellent tools and they have been accepted as such by Industry. For example, the medium of supervisor's conferences as a means to obtain consultative supervision is being used extensively by many industries. The trouble is that it isn't being used for the purpose for which it was designed.

I should like to have you hear what a first line supervisor thinks about it.

The New England Electric System companies recently held a contest for first line supervisors. The contestants were asked to write a letter to an imaginary friend promoted to a supervisory position telling him in plain words, "What makes a good foreman?" Ten prize-winning letters were selected and the winners attended the convention of the National Association of Foremen held in Philadelphia. These men were asked on their return to tell about some of the things they learned at the convention in papers presented at their company supervisors' meetings. The following are quoted excerpts from one of these papers presented at a supervisor's meeting last December and are given with permission from the writer.

"There were about 6500 delegates representing practically every phase of American Industry and I can state right now you would go far for a more representative gathering of supervisory men.

"As our own Foremen's Meetings resume again for another year the thought arises once more even as I heard it asked many times at the convention—why? That may appear a peculiar question but I think it is deep in the minds of all foremen, not only in our own group, but all over the country, and I do not speak from hearsay. How often have I heard the question, 'Why are we here; why does Management expect to get more out of us by these meetings; why take up our time with such stuff; why don't we go on as we always have?' And mind you, these questions don't come from our own group alone by any means.

What's Wrong With Management?

"Of course, I know what has been told us. These meetings are for the benefit of the foreman, to help him out with his problems, to bring him up to date on current events, to make smooth his path in times of trouble. But to foremen who have supervised men for a number of years as most of the present-day foremen have, the situation is rather bewildering. The thought occurs to them—what's wrong with me? Or more to the point—what's wrong with management? They gave me my job twenty or thirty years ago and it took them a long time to make up their minds that I needed all this extra help. There is a growing suspicion in most foremen's minds that perhaps it is management that has been lax in past years in labor relations and now with increased union activities, a complete turn-about in labor practice is necessary.

"If such is the case, and in my own mind I believe the facts point to such a conclusion, let's bring it out in the open. Tell the supervisors the exact facts and, if management makes a mistake that has to be rectified, tell the supervisors. We are, I hope, intelligent enough to understand and I know that any foreman entitled to be called such will back management 100 per cent. Let's get together on our problems and settle them like intelligent men.

"However, and slight though it may be, I did notice an irritating element that kept creeping in. Whenever we had a speaker from the strictly Foremen's Group, we were addressed as 'Management Men of America'; when a management member spoke we were then called — 'Members of the Foremen's Association.'

The Foreman's Insecurity

"I do not believe that the old line of division has completely broken down and the partial failure of supervisors' meetings and conventions is due to the fact that the foreman has not been sold on the idea that management is trying to improve his, the foreman's, status in life.

"In conclusion and in recognition of the holiday season I will quote a verse:

'God rest you merry gentlemen
Let nothing you dismay
I hope this won't lose me my job
When it comes Christmas Day!' "

This paper really does not need additional comment. However, I should like to point out that when he says, "I heard it asked many times at the convention," "I think it is deep in the minds of all foremen," he wasn't trying to rationalize his own feelings.

His concluding verse as did other parts of his paper gives the sad message of a feeling of insecurity. He speaks of the risk one of our better supervisors of long service takes when he has the courage to speak his mind. The fact that his paper was welcomed by the management of his company, that actually there was no risk, that as a matter of fact management felt that for the first time they had overcome the supervisor's reticence, does not make any difference. It is the feeling of insecurity and the

mistrust of motives, which clearly points to the failure of our objectives.

Although I have been one of those who have constantly used the phrase, "It takes time and Rome wasn't built in a day," I am convinced that we are running out of time. It is my belief that now as never before we need the friendship and the loyalty of our employees in order to survive as business-managed utility companies.

Last month the legislative counsel for several electric and gas companies in this state spoke before management groups throughout our system. What he said was very much of a shock to those who are not in close touch with employee and public opinion. The following is a very much condensed version of his talk:

Adverse Public Opinion

"The business-managed electric and gas companies have failed to sell themselves to the public and to the voters. Politicians are the most accurate barometers of public opinion and this opinion is reflected in the type of bills that are presented for Legislative action. Filed for action in 1949 are seven bills to investigate electric and gas companies. Also bills for a gross receipts tax, for development of the waterways, for the establishment of a State power authority to acquire property by eminent domain, to construct projects and sell power; to issue revenue bonds and to make contracts with other states and the federal government.

"There are two bills to make it easier to obtain municipal plants. Both bills require a majority vote in one year as against the present provision of a two-thirds vote in each of two years.

"One bill would permit the taking over of a private company by a petition filed by 5 per cent of the voters for a referendum at the next election. There are others, none of which will make it any easier for us to do business. Those who doubt whether what happened in the Pacific Northwest and the Tennessee Valley could happen in New England need only to look at the Holyoke Water Power Company which is now fighting for its very life."

Public Power Grows

To his story of conditions in Massachusetts can be added these facts of conditions in the United States.

In 1933 there were 11 Federal Power plants and one under way. Today there are 652 or 52 times the number 15 years ago. The increase in generating capacity in 15 years is 3088 per cent. Under construction at the start of 1949 are 30 new federally owned power plants. When they are in service the Department of Interior will have moved into five new states and expanded in 15 more.

The enthusiasts of public power now admit quite frankly that it is socialistic and most of them contend that a little bit of socialism is all right. The *Chattanooga News Free Press* asks this question, "When does a little that is constantly growing cease to be little and start being a whole lot?"

The legislative counsel flatly stated that we not only had failed to sell the public but we had failed with our own employees. He pointed out that 25,000 employees, their families and their friends could be made a potent factor in forming public opinion in the communities in which they live.

I believe this can be done if we can shock enough people into the realization that there are other important things besides their technical and operating problems. We must get rid of the complacent attitude that we have a Personnel and a Public Relations Department who will take care of these problems. It will take a lot of doing, but it can be done.

"Tell Us the Facts"

First, let us take heed of what our Supervisor suggested when he said "tell us the facts and let's get together on our problems and settle them like intelligent men." To which I would add: "and give us at the same time that feeling of participation in company affairs, that feeling of belonging, of self-importance that all of us crave."

Let us tell the employees in such a way that they may have that feeling. Let us tell them and prove to them that their personal and the community welfare is also involved. Translate the pending legislation into terms that they can understand and exactly how it will affect them and their company.

Yes, it can be done. *But*—and this is a large but—It can't be done in the spirit of, "Boys! We have a hot potato and we need you to handle it."

Let it be the start of real two-way communications. Let it be the start of closing that gap that exists between our beliefs and our conduct in everyday operation.

To make it work there must be a recognition of the fundamental necessity of maintaining two-way communication between employees and management. The destructive thinking must be replaced with constructive understanding. There must be constant efforts to inform employees about management policies and objectives, since their future and that of their families is bound up with the future of the company. The ever-present danger of disruptive and dangerous rumor must be eliminated by informing employees of changes *before* they are made or at least *before* they read about it in the newspaper.

Enlist Aid of Labor Unions

Let us also enlist the aid of our labor unions. Labor leaders believe in free enterprise as they have proved by their rejection of collective systems. I say this with the knowledge that the Massachusetts C.I.O. Textile Unions at their last convention passed a resolution urging Congress to act promptly in enacting a public power project program for New England.

These unions are using as major ammunition the fallacy that the cost of power is the main reason why textile industries are moving out of New England.

However, the unions representing utility employees are definitely against public ownership. Last October, the Utilities Workers' Union, a C.I.O. affiliate, held its national convention in Washington. On previous occasions, this labor group had shown considerable sympathy to measures which would lead to public ownership of the utility industry. This time *one* resolution endorsed private ownership of utilities as long as responsible management and good labor-management relations exist. *Another* opposed tactics to drive public utilities into public hands along with "any unfair acquisition of a privately owned utility" through condemnation or confiscation. Still another pledged the union to full acceptance of "the American concept of democracy" and preservation of the "American way of life."

Labor Rights Guaranteed

The editorial comment of the *Montpelier Argus* on these resolutions may well be taken as the sort of information which needs to be thoroughly understood by all our employees.

"It is difficult to see, in the light of

world events of both the present and the past, how any intelligent group of workers could take a different position. In every country in which socialism, communism or any other system based on dictatorship has been adopted, the workers have lost the rights and prerogatives which are guaranteed them under capitalism. Even in now socialized England there is a measure of forced labor, and in certain major enterprises no man can change his job without the permission of the politicians in power. And in the real police states, labor is callously used to serve the whims of the masters.

Capitalist Countries Offer Freedom

"Where—except for the capitalist nations—have workers the right and the power to bargain on an equal basis with employers for shorter hours, higher wages, and anything else they desire? It is obvious that these rights can never exist where the employer is the state. The state is all-powerful, and its edicts, no matter how unjust, must be obeyed.

"The utility union's opposition to public ownership is particularly important. If it is fitting for government to own and operate one kind of enterprise, it is fitting that it own and operate all kinds of enterprise. A precedent, once it is firmly established, can be extended indefinitely. And that is precisely the way nations go step by step down the road that ends in oppression and regimentation and the cynical destruction of human liberty."

The employees of the New England Electric System are represented by three different unions. All of these unions have many times in the past volunteered their services in combatting legislation detrimental to the company and employees' welfare.

On actual methods and techniques that may be used in enlisting the aid of our employees, I hesitate to make any recommendations to experts in effective communication. I do know that it *can't be done* by showering the employee with a deluge of written material. It seems to me that if you do agree that we are faced with a dangerous fight, would it be too much to ask that it receive the careful planning, the thinking and the efforts we expend on our other operating problems, and our sales and advertising campaigns?

One of the major problems will be to translate what we have to say in words that workingmen can understand. The only response such terms as "free enterprise" and "national economy" get from the average workmen is that they associate them with the National Association of Manufacturers. This problem alone should be a challenge to you who are skilled in the use of words. Incidentally, one of the best articles written on this subject is "How to Tell Our Stories to Employees" by a member of your association, Charles T. Allen, Vice President of the Connecticut Light & Power Company.

I should like to suggest we study the methods of union leaders in the art of effective communication. Note what they are doing in Rhode Island in the areas which have been hit the hardest by the closing of the textile mills. They are going direct to the workers. Aided by the government, they are putting the blame on cost of power; not by use of printed material, but by the use of speakers and visual aids. Sure, we know that the reasons presented are false and that the question of employee work loads in New England as compared with the South will not be mentioned. Workers do not read reports issued by the New England Council and, therefore, as far as they are concerned, it is the gospel truth.

An Important First Step

The New England Electric System has already taken the first and a most important step. Our President is now engaged in a series of meetings held in each district with all levels of management including first line supervision.

We also have under way in each district a program to improve our customer relations and it is our belief that the methods used may well be expanded to cover a broader field.

Our customer surveys showed that the prevailing feeling toward us was one of being able to take us or leave us, and showed a definite need for improvement. Before formulating any definite plan we presented the problem by means of a series of meetings on a district basis directly to the customer contact employees and their supervisors in the spirit that the company had failed and not that they as contact employees were not doing a good job. They were asked to give us the necessary information. The questions asked by customers, situations encountered on customers' premises, present company policies and practices which they had found were irritating to the customer, etc. And thus they were asked to participate in the forming of policies and practices—the holiest of the management prerogatives.

Grass Roots Response

Needless to say, the response was excellent. The most common one from many groups was "We have been waiting for this for years." Why doesn't the company do this? Why doesn't the company do that? Customers do not understand why we do this. Customers say, "They were quick in asking for a meter deposit but damn slow in returning it." "What should I say when the customer asks this question?" Most important of all, the employees themselves recognized and asked for training. We not only secured grass root information, but the all important motivation for training, and at the same time were successful in giving the employees a feeling of participation in the company affairs and the feeling of self-importance which all of us so strongly desire.

The industrial psychologist and the employee morale surveys tell us that ranking high in the list of what the worker wants is a feeling of belonging and recognition of his individual responsibility and significance of his work. They want the satisfaction that comes from being accepted and recognized as people of worth by their friends and associates.

It is ironic but true that our employees get that satisfaction to the highest degree only when disasters are upon us. All of you who have been through major disasters such as hurricanes and floods will know exactly what I mean. That warm inner satisfaction of fighting in a good cause!

It is my belief that we are facing our greatest challenge now in our defense of the American way of Life. It is my belief that this challenge can best be met by enlisting the aid of all our company members and that their response *again* will be "We have been waiting for this for years."

A Catalog of
EEI Publications
is available upon
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New York 17, N. Y.

All-Electric Kitchen Program Launches Industry's First Postwar National Sales Drive

THE new advertising and promotional program on all-electric kitchens, sponsored by the electric utility industry, and formally launched this month, was characterized as "the initial step in a coordinated national drive to sell America the advantages of Electrical Living, rather than individual appliances," according to Ernest R.

HARRY RESTOFSKI
Chairman, EEI Commercial Division General Committee

Acker, President of the Institute.

This program, the "industry's first national sales effort in the major residential kitchen market since pre-war years," was introduced this month and will be carried on by the electric light and power companies in their respective areas, using materials prepared by the Institute, Mr. Acker said.

A market of $35 billion in retail sales of electric appliances, with an annual consumption of 165 billion kwhr of electricity, and electric service revenues amounting to over $2 1/3 billion per year, is the industry's long-range goal in this program, it was said by Harry Restofski, Chairman of the Institute's Commercial Division General Committee.

Emphasizing the importance of this market, Mr. Restofski said that "165 billion kwhr per year is more than three times the industry's total sales to homes in 1948; the $2 1/3 billion in annual revenue is greater than the industry's total revenues in any year prior to World War II, and is 1.7 times larger than present annual revenues from residential sales." This goal, he added, will be reached when all kitchens in wired homes are electrified according to modern standards.

The All-Electric Kitchen Program

The program itself is built around the theme, "Of Course—It's Electric!", a slogan that will answer scores of questions a consumer may ask about any electric appliance. "Is it clean? . . . Is it automatic? . . . Does it do a good job? . . ." To these and similar questions, the electrical industry's answer will be "Of Course—It's Electric!"

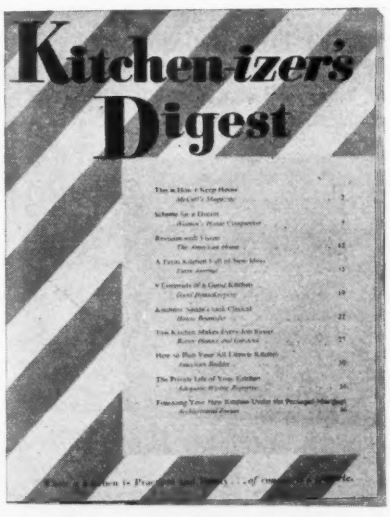
The promotional materials for the program, which were prepared by the Institute's Electric Kitchen and Laundry Committee under its Chairman, T. O. McQuiston, include a consumer booklet, a color motion picture, newspaper ads, radio spot announcements, outdoor advertising, and a kitchen planning kit. Other materials have been designed to supplement the advertising of electric appliance manufacturers.

"The Kitchenizer's Digest"

Spearheading the program materials is the "Kitchenizer's Digest," a 40-page consumer booklet, to which ten leading authorities on kitchens and kitchen planning have contributed their knowledge and experience. The authors are:

Elizabeth Sweeney, *McCall's Magazine*

Elizabeth Beveridge, *Woman's Home Companion*



The "Kitchenizer's Digest," a 40-page consumer booklet prepared as part of EEI All-Electric Kitchen Program.

T. O. MCQUISTON
Chairman, EEI Electric Kitchen and Laundry Committee

Edith Ramsay, *The American Home*

Leonore Sater, *Farm Journal*

Katherine Fisher, *Good Housekeeping*

Charlotte Eaton Conway, *House Beautiful*

Helen Stark, *Better Homes and Gardens*

E. G. Gavin, *American Builder*

Frances Armin, *National Adequate Wiring Bureau*

George Palmer Shutt, *Architectural Forum*

The term 'kitchenizing' means: (1) an all-electric kitchen, (2) adequate and proper wiring and (3) proper planning and treatment of the three all-electric kitchen work centers. The "Kitchenizer's Digest" contains facts, figures and definite, detailed suggestions on color, decoration, selection of appliances and cabinets and their best arrangement, financing and other considerations relating to the installation of an all-electric kitchen.

Mrs. Allen, star of "The Constant Bride", a color movie featuring the All-Electric Kitchen Program, gets a lesson from a bride in the marvels of modern electric cooking in this scene from the movie.

Prepared newspaper advertisements that feature the All-Electric Kitchen Program slogan "Of Course, It's Electric," and offer the "Kitchenizer's Digest" in the campaign to build residential load.

A 16-mm motion picture, in color, "The Constant Bride," is another feature of the program. In 27 minutes running time, it tells a comprehensive, interesting story of the all-electric kitchen and its benefits to the housewife.

Intended for showings by electric utility companies to customer groups, the film tells a human-interest story that will interest audiences of both sexes and all ages.

A Bride Teaches Electrical Living

Its theme is the all-electric kitchen, and the advantages which a kitchen properly planned and equipped with modern electric appliances offers to the homemaker . . . freedom from drudgery and unpleasant tasks, extra free time and other benefits. Its story tells how Mrs. Allen, a typical housewife, secures an all-electric kitchen for herself—despite husbandly opposition and her own lack of knowledge of how to start.

Stealing a look at a home under construction, Mrs. Allen meets the bride for whom it is being built, Mrs. Winn. Examining the plans for the kitchen, Mrs. Allen points out the hard work that will have to be done in this room—only to hear Mrs. Winn describe the marvels of Electrical Living and the appliances with which her kitchen will be equipped.

A visit to Mrs. Allen's kitchen discloses the marathon involved in simply preparing a cup of coffee, due to lack of proper planning, poor wiring and old-fashioned appliances. Still doubting Mrs. Winn's claims, Mr. Allen goes to the Winn's housewarming party early, to see how the bride will come through the ordeal of dinner preparation, and is amazed at the way an all-electric kitchen takes the burden off the homemaker's shoulders.

Mr. Allen's comments as to his wife's disposition, had such a good meal been prepared at his home, make up Mrs. Allen's mind—she wants a modern electric kitchen! With Mrs. Winn's help, she plans its arrangement and selects appliances. The transformation of her kitchen complete, Mrs. Allen holds a dinner party in celebration—which is climaxed by Mr. Allen, as husbands will, calmly assuming credit for the entire job.

"The Constant Bride" has a message that is primarily educational. The characters are everyday people, and the story is a believable one, that could happen anywhere.

Prints of the film are available to electric utility operating companies from the Edison Electric Institute, at a sliding scale of prices, depending upon total meters. The film was prepared by Wilding Picture Productions, Inc., New York City, under the supervision of the Institute's Electric Kitchen and Laundry Committee.

Supplementing the Digest and film are a series of newspaper ads in several sizes, with a variety of copy slants, featuring the "Kitchenizer's Digest" and the slogan, "Of Course — It's Electric!"; a complete radio spot announcement series, three 24-sheet outdoor advertising posters, window display cards, envelope inserts, truck posters, employee badges and other promotional aids are included in the program. All of these materials will be made available to the electrical industry by the Edison Electric Institute.

Use of the Program

The All-Electric Kitchen Program is suitable for use by all electric companies. The "Kitchenizer's Digest," the film and other aids are primarily educational and are in no sense high-pres-

(*Continued on page* 58)

One of the 24-sheet outdoor advertising posters for the All-Electric Kitchen Program to be used by electric light and power companies.

The Annual "Must" For Electric and Gas Utility Accountants

Joint National Accounting Conference at Detroit, April 11-14

PLANNING Committees of the Edison Electric Institute's Accounting Division and the American Gas Association's Accounting Section are sure that this spring's joint conference will be bigger and better than ever. Why not? Every Planning Committee learns from its predecessors their mistakes and how to avoid them, their successes and how to improve on them. One thing is sure. Anyone interested directly or indirectly in the accounting work of electric and gas utilities, who has an opportunity to participate in the next joint accounting conference, should do so.

The program is now taking fairly definite shape, though some details are not finally settled at this date. It will follow the usual pattern of developing from the general into the particular.

Monday morning, April 11, will be devoted to registration, renewing old acquaintances, and inspecting the exhibits of accounting machines and office equipment, a far-ranging variety of which will be on display.

At 2:30 Monday afternoon the conference will begin its formal program with a general session at which all participants in the conference will find something of interest and value. An executive of the Michigan Consolidated Gas Company will welcome to Detroit those attending the conference. H. Carl Wolf, director of the American Gas Association, will also have a message for accountants of both industries.

Employee Relations Studies

Accounting Employee Relations, a topic of constantly increasing importance in the work of utility accounting officers, will be dealt with in two aspects. There will be a novel presentation of "Office Working Conditions or Practices in Accounting Departments" under the leadership of J. F. Farley, New York State Electric & Gas Corp., chairman of the AGA Committee on Accounting Employee Relations. The chairman of the cooperating EEI Committee in this project is A. W. Smith, Worcester County Electric Co., Worcester, Mass. A broader aspect of accounting employee relations, the nature of which is not yet determined, will be presented by C. B. Boulet, Wisconsin Public Service Commission, chairman of EEI Committee on Industrial Relations. At the Monday afternoon general session, also, Sumner Slichter, an outstanding economist, will give his views on the short term and long term economic outlook for the public utilities. It is expected, too, that at this session a utility executive whose name has not yet been announced will tell the Conference, "What A Utility Executive Expects From Accounting Officers."

Financing Problems

At 9:30 Tuesday morning, April 12, the conference will resume in two large groups and two smaller ones—general activities, customer activities, materials and supplies (AGA only) and taxation accounting. The general activities session will include the following addresses: "Financing and Investor Relations" by H. H. Scaff, chairman of the EEI Committee on Financing Utility Capital Requirements; "How Far Will Your Rate Dollars Stretch," by F. W. Brooks, The Cleveland Electric Illuminating Co., with some suggestions for new approaches to rate-regulating authorities; "Capitalizing Various Overhead Costs," a three-part presentation offering first, a brief report of a joint project committee on this subject by J. P. O'Brien, The Cincinnati Gas & Electric Co.; second, a more specific discussion of the economics of capitalizing cost of money (interest during construction) by H. L. Dalbeck, New England Power Service Co.; and finally a panel discussion on a number of phases of this still highly controversial topic on the capitalization of overheads.

The General Activities group will have a luncheon meeting at the close of this session at which H. B. Doran, Chairman of the Department of Public Utilities, New York University, will speak on "Current Tax Developments," followed by a discussion led by B. S. Rodey, Consolidated Edison Co. of N. Y., Inc.

Customer Activities

The Customer Activities session on Tuesday morning expects to have papers or reports on "Business Office Standards to Improve Customer Relations" presented by E. W. Smith, Pennsylvania Power & Light Co.; "Let Work Simplification Help You Manage Your Customer Accounting Department" by H. E. Steiner, Central New York Power Co.; "Customer Activities Organization" by H. E. Cliff, Public Service Electric & Gas Co.; and "The Key that Opens the Door," a keyhole view of basic collection practices, by S. C. Grant, Philadelphia Electric Co.

The Materials & Supplies Committee of AGA will also meet Tuesday morning to discuss problems involved in the acquisition, storage, and issuance for use of the vast and heterogeneous mass of materials and supplies necessary for the successful operation of any gas utility enterprise. The EEI has no committee in its Accounting Division specifically devoted to materials and supplies accounting. The operation of purchasing and storeroom departments of electric utilities is covered by the Institute's Purchasing & Stores Committee. The Materials and Supplies Committee will continue its session through a committee luncheon on Tuesday and on through Tuesday afternoon. Wednesday will probably be devoted to visiting the local utilities' storerooms and getting some ideas for improved methods.

The two taxation accounting committees will meet Tuesday morning in a

session open to committee members only.

In addition to the Tuesday luncheon meetings of the General Activities group and the AGA Materials and Supplies Committee, there will be several other group luncheons on that day. At the Customer Accounting luncheon meeting, continued into the afternoon, the most tantalizing topic is billed as "Sacred Cows." It is expected that this project will aim to show up a lot of practices and procedures which have outlived their usefulness, if they ever had any, but which are continued in unthinking homage to precedent. This meeting will also discuss an exhibit of recent meter sheets and bill forms.

At the luncheon meeting of the Credits and Collection Committees, an informal discussion of present-day credit and collection problems will be featured.

What Customers Think of Your Company

The Customer Relations luncheon will hear from L. Stoecker, Public Service Electric & Gas Co., about "Favorite Customer Relations Procedures and Practices," and also give thought to the question "How Do You Know What Customers Think of Your Company?" propounded by C. J. Berner, Wisconsin Electric Power Co.

On Tuesday afternoon following the general activities luncheon, that group will break up into five separate sessions —General Accounting, Plant Accounting, Taxation Accounting, Depreciation Accounting and Internal Accounting.

The General Accounting session will hear first a paper on "Controlling, Filing, Preservation, and Disposition of Records" by J. G. Hoffman, Consolidated Gas Electric Light and Power Co. of Baltimore. Next there will be a report of a joint subcommittee on "Functional or Responsibility Accounting," by A. B. C. Dillworth, Northern Natural Gas Co., followed by a discussion led by Louis Provencher, The Detroit Edison Co., and A. W. Hatch, Ebasco Services, Inc. Third, a report on "Budgeting and Forecasting," by D. W. Peterson, Minneapolis Gas Light Co., after which Leonard Spacek, partner of Arthur Andersen and Co., will speak on "Budgetary Control for Public Utilities Under Present-Day Conditions." The discussion will be led by R. O. Linville, Kansas City Power & Light Co.

The two Plant Accounting Committees, meeting jointly Tuesday afternoon, will have before them subcommittee reports on "Electric Mass Accounts," "Accounting for Gas Construction Costs," and "Budget Control of Construction Expenditures."

The two Tax Accounting Committees will meet jointly Tuesday afternoon in a session open only to committee members, for the usual informal interchange of experiences and opinions on recent tax problems.

The Depreciation Committee will have an ambitious program on Tuesday afternoon, including a report by C. N. Rice, Jr., Northern States Power Co., on "What Goes On In Depreciation in Wisconsin"; "Computation of Depreciation Reserves Under Various Methods," a discussion led by G. T. Logan, Philadelphia Electric Co.; a summary presentation of a report on "Service Life Estimation" presented by P. H. Jeynes, Public Service Electric & Gas Co., chairman of an Engineering Subcommittee which has been working on this report for a long time; a paper on "Effect of Changing Price Levels on Indicated Mortality Characteristics of Plant" by P. L. Griffith, Gilbert Associates.

The subcommittee on Internal Auditing will hold a session on Tuesday afternoon for members only to discuss certain phases of a long-term program for improving practices and procedures of internal auditing.

On Tuesday evening will be held the conference dinner, now a well-established function at these meetings. Some unusual entertainment features are promised.

Wednesday morning the General Accounting Committee will hold its final session. The subjects to be presented are: "Clarification of Reports to Stockholders, Employees, and the General Public" by E. T. Colton, New Orleans Public Service Inc.; "Machine Applications for General Accounting" by Harry Jeffs, Queens Borough Gas & Electric Co., followed by a discussion; a paper, speaker to be announced, on "Computation of 'Overtime on Overtime' Under the Supreme Court Interpretation of the Fair Labor Standards Act in the Bay Ridge Case"; and finally a four-part program on "Internal Auditing" covering: (1) a brief report from the joint Subcommittee on Internal Auditing, (2) a paper on "Internal Auditing of Fire and Other Insurance Coverage" by P. J. Buzanga, Consolidated Edison Co. of N. Y., Inc.; (3) a paper on "Internal Auditing of Payroll and Time Records" by C. J. Nichols, Consolidated Gas Electric Light and Power Co. of Baltimore; (4) a general discussion period led by J. K. Laurentz, The Brooklyn Union Gas Co.

Wednesday morning, the two Taxation Accounting Committees will also hold a joint session open to all who are interested. The subjects scheduled for discussion include: "Pension Tax Problems," "Distinction for Federal Tax Purposes Between Capital and Maintenance Expenditures," "Premium and Discount on Convertible Debentures," "Current Tax Proposals Before Congress" and "Recent Tax Decisions."

Plant Accounting Sessions

The Depreciation Committee will meet Wednesday morning to complete any discussion of its Tuesday afternoon program, and at eleven a.m. will join a joint session of the two Plant Accounting Committees to hear and discuss a paper on "Depreciation and Its Relation to Plant Accounting and Property Records" to be presented by Joseph Jeming, consultant and guest member of the Depreciation Accounting Committee.

The Plant Accounting Committees on Wednesday morning, prior to a joint session with the Depreciation Committee, will listen to and discuss a subcommittee report on "Do Your Priced Gas Inventory Records of Inside Plant Equipment Meet Your Internal Requirements?" by H. F. Carey, Long Island Lighting Co.

The entire customer activities group will reassemble in one meeting on Wednesday morning at which the following topics will be presented: "Customer Relations Is Everybody's Business," by W. E. Sturm, West Penn Power Co.; "Marked Sensed Meter Reading?", a panel discussion with particular reference to the affect of this procedure on underlying customer accounting records and meter books; "SOS—Service Order Simplification—An Advance Report," presented by E. H. Martinson, The Washington Water Power Co.; "The Credit Picture," an analysis of national trends and a suggestion for continuous review and publication, by H. D. Amann, The Brooklyn Union Gas Co.; and finally, "Customers' Accounting Costs and Production Comparisons" by M. J. Walsh, Consolidated Edison Co. of N. Y., Inc.

Utility Designed Substations

By E. B. Shew
Philadelphia Electric Company

A paper presented before the Joint Session of the Electrical Equipment and Transmission and Distribution Committees, EEI, Chicago, Illinois, May 3, 1948

THE design of a distribution substation reflects the engineering personality of its designer just as the selection of a suit of clothing reflects the individual's personality. This is emphasized when we observe the variety of designs employed throughout the country and even within company boundaries. There are even period designs that date the construction and today we are striving to attain the "new look" for our distribution substations with more practical success, we hope, than the fashion designers have attained.

The primary objectives sought in the design of a distribution substation are:

a) High service reliability.
b) Low cost.
c) Simplicity in electrical connections, physical arrangement, operation and maintenance.
d) Appearance in harmony with surroundings.

These points are well known to this group and it does not appear appropriate to discuss them at this time. Considerations influencing the location of distribution substations, such as location of existing substations, load density, economics, site availability and right-of-way conditions are matters that must be decided locally for each substation site.

This paper is the second in a series to appear in the EEI BULLETIN. *The third paper will appear in a later issue.*

One item that bears some emphasis, however, is that of simplicity. This has a direct bearing on costs and on the ability to maintain a high grade of service during fault conditions and during inspection and maintenance of the substation equipment. Great strides have been made in the past several years toward the simplification of distribution substation design including elimination of duplicate busses and other non-essential items. There is some thought that more progress should be made in the utility industry on uniformity of arrangements. This is desirable because it will lead to the standardization of equipment with reduction in price and in time of delivery under normal conditions.

There are a great many factors, however, which oppose the complete accomplishment of this goal and which make it difficult, if not impossible, to realize the optimum results. Among these are individual system conditions, character of load, historical background of the operating organization, management policies and philosophies, and even the personal likes and dislikes of the designing engineer. The rationalizing and simplifying of physical and electrical arrangements are certainly aided materially through discussions in groups such as this one where ideas and experiences can be exchanged freely.

The distribution substation performs a very simple function in the system scheme. Reduced to basic terms, its primary purpose is to transform the supply voltage to a value that can be handled economically and safely and to provide appropriate voltage regulation for the supply of high quality service. Usually this is also a convenient place to divide into a number of feeders, each with its separate protective devices to reduce widespread outages.

In order that a distribution substation engineer may produce a design which meets the primary objectives mentioned, it is essential that his efforts be coordinated with that of the distribution system engineer on the following points:

a) Initial and ultimate loads.

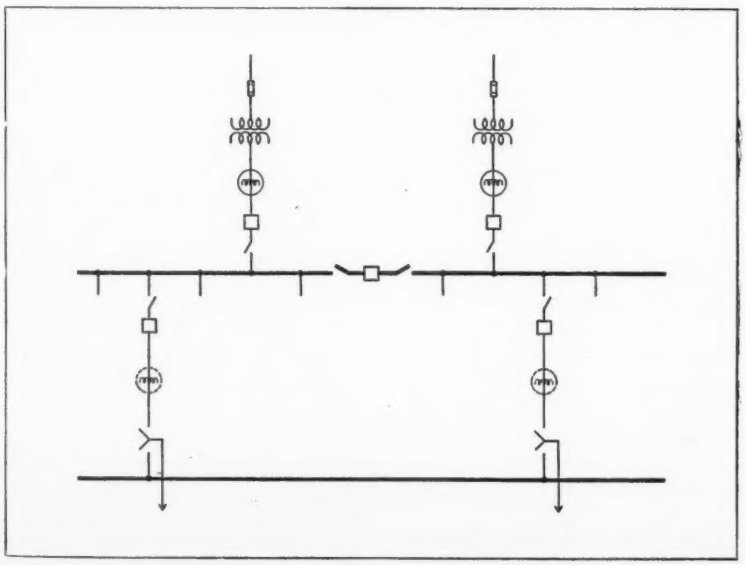


Fig. 1—Single-Line Diagram—Substation "A"

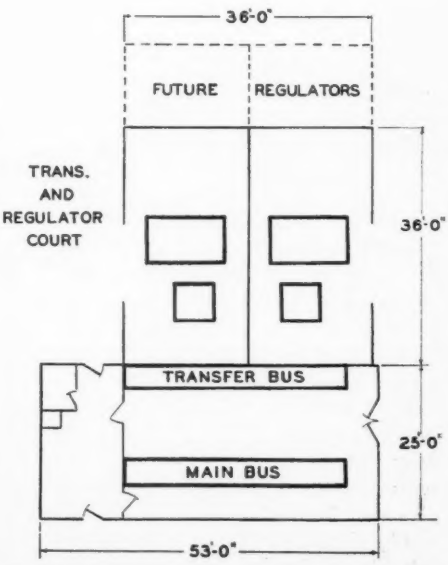


Fig. 2—Physical Layout for Diagram in Fig. 1

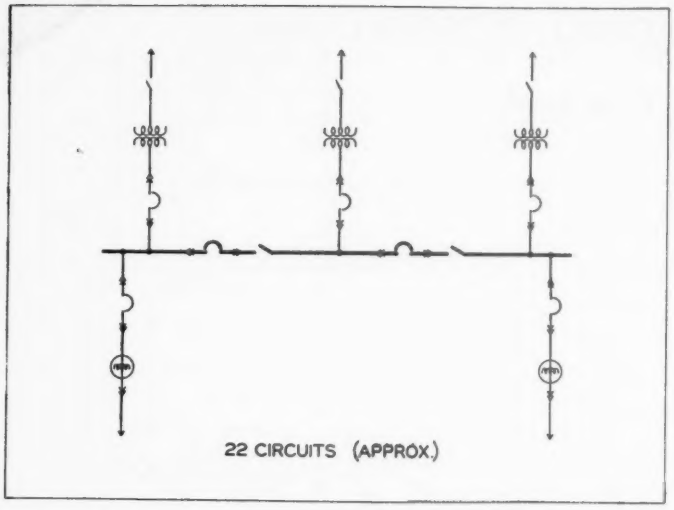


Fig. 3—Single-Line Diagram—Substation "B"

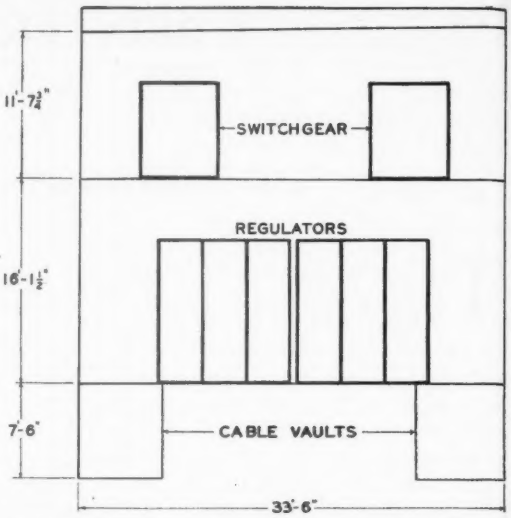


Fig. 4—Two-Floor Layout for Diagram in Fig. 3

b) Nominal voltage of the distribution feeders.

c) Quality of service—
Degree of reliability;
Range and method of voltage regulation, whether it be bus or individual feeder using single or multiphase regulators.

d) Outgoing feeders—
Number and capacity of each;
Operating requirements, such as switching arrangement including the need for a transfer bus;
Control requirements, including type of relay protection, coordination of relay settings with fuses, single or multiphase switching, reclosing cycles and instrumentation.

The detailed manner in which these problems are handled will determine the satisfactoriness of the distribution substation from the viewpoints of cost, reliability and ease of operation.

A complete coordination and understanding must be developed between the distribution engineer and the substation designer if the best overall arrangements are to be produced. For example, one justification of the transfer bus is for maintaining the substation equipment. In some cases it may be less expensive to provide additional facilities on the highway to permit taking the station equipment out of service for inspection and maintenance purposes. The transfer bus also may be used to facilitate locating and breaking down feeder faults through a breaker with relay settings appropriate for this service.

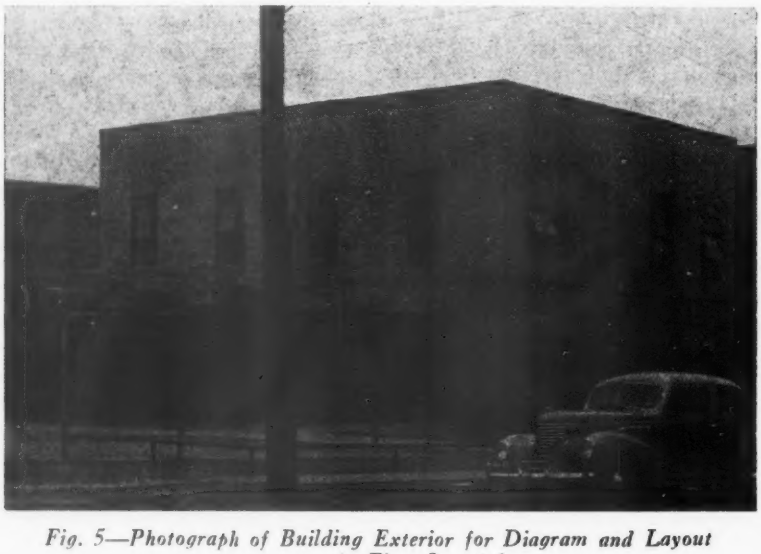


Fig. 5—Photograph of Building Exterior for Diagram and Layout in Figs. 3 and 4

Under certain conditions, the transfer bus can become an expensive accessory. For example, in a two-bank substation with one bank connected to the transfer bus and both banks operating in parallel on the main bus, the short-circuit currents may be so high that reactors will be required in the transfer bus feed. So far as increasing reliability is concerned, the transfer bus is of value only in case of substation equipment failures. On one system with which the author is familiar the ratio of station faults to outside faults is approximately one to forty-five.

Of course, in addition to faults there is the problem of testing and maintaining the station equipment and this again comes back to policies of the individual organization. If there is a practice of frequent test operation of relays involving the tripping of the feeder breaker, the transfer bus will be of some value. However, the need for frequent relay testing is questionable and a critical examination of the practice might reveal the possibility of lengthening the testing periods or even eliminating testing procedure entirely. This and similar items should be jointly studied by the distribution and the substation engineers. Results will differ depending upon the many variable factors mentioned earlier.

In a design where the control switchboard occupies the same width as the feeder breaker, the number of protective

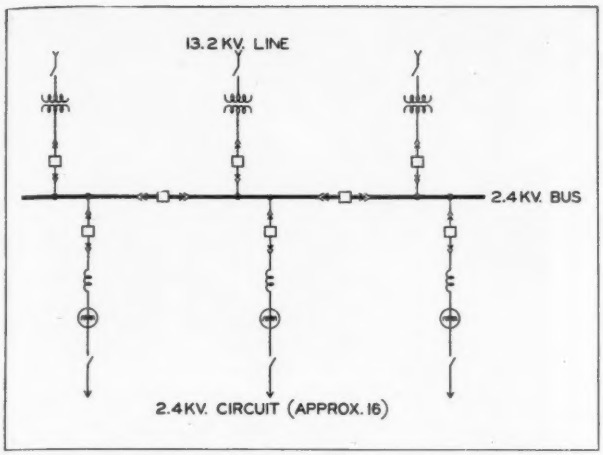


Fig. 6—Single-Line Diagram—Substation "C"

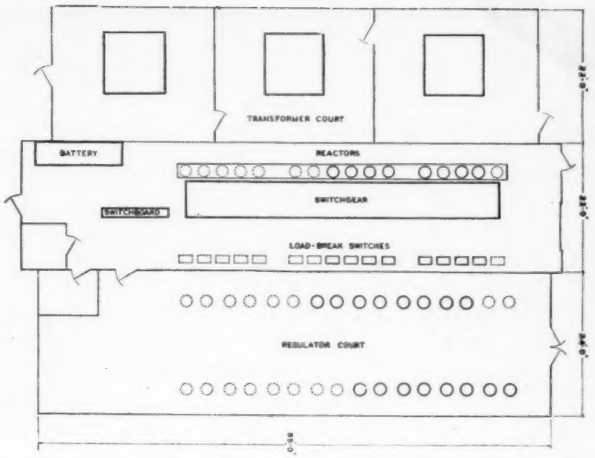


Fig. 7—Physical Layout for Diagram in Fig. 6

Fig. 8—Photograph of Building Exterior for Diagram and Layout in Figs. 6 and 7. Transformer Court at Left; Regulator Court at Right

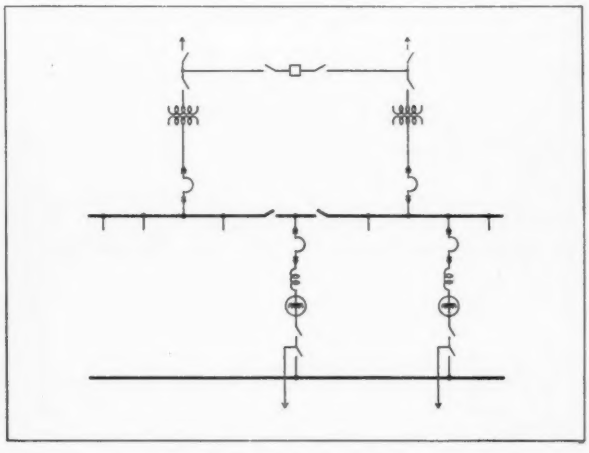


Fig. 9—Single-Line Diagram—Substation "D"

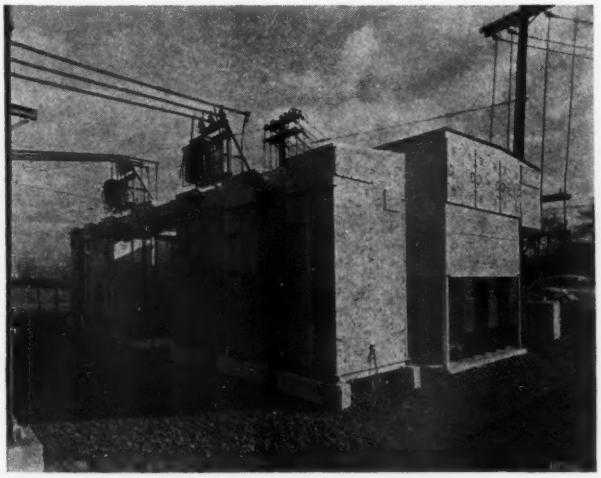


Fig. 10—Photograph of Equipment for Diagram in Fig. 9. Main Distribution Voltage Bus and Breakers are in the Foreground and Transfer Bus Enclosure at the Rear

Fig. 11—Photograph of Equipment for Diagram in Fig. 9. End of Main Bus and Breaker Enclosure in Center With Regulator and Transfer Bus to the Right

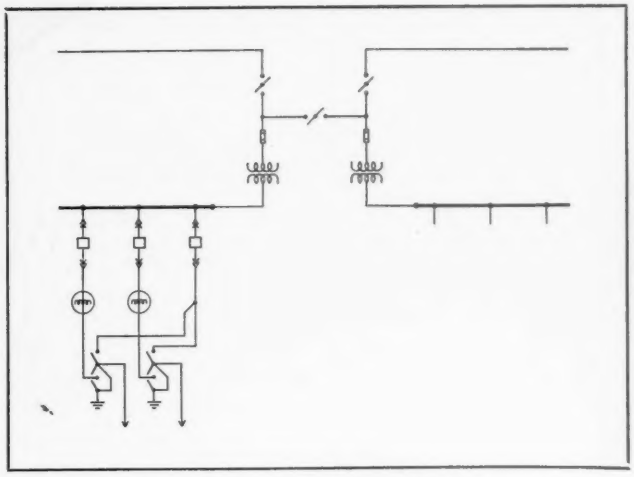


Fig. 12—Single-Line Diagram—Substation "E"

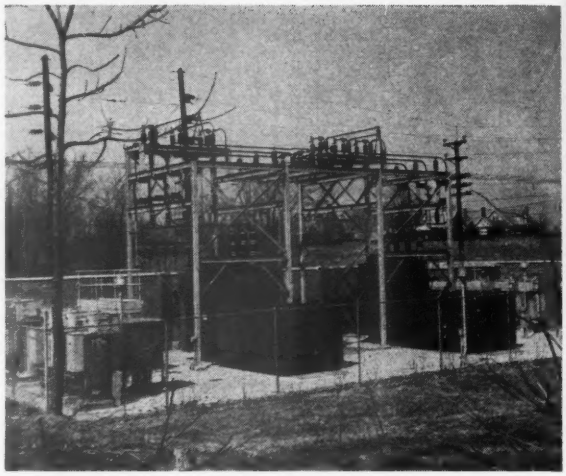


Fig. 13—Photograph of Equipment for Diagram in Fig. 12

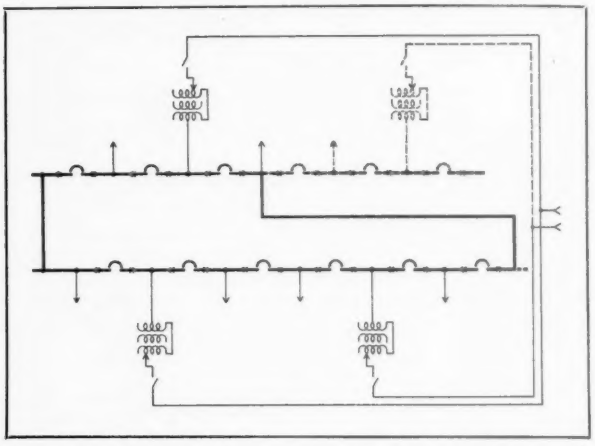


Fig. 14—Single-Line Diagram—Substation "F"

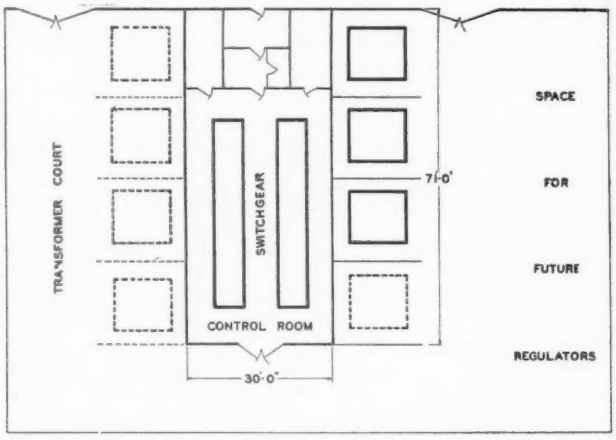


Fig. 15—Physical Layout for Diagram in Fig. 14

and control devices may become a problem; for example, the inclusion of several sets of relays and instruments in addition to the multiplicity of control devices and instruments may so crowd the switchboard that it becomes necessary to provide a panel that is wider than the feeder circuit breaker cubicle. Here a critical examination of every device that is mounted on the switchboard becomes appropriate so that unnecessary items will be omitted in favor of the essential devices in the interest of simplicity and cost savings.

There is a tendency today toward unattended operation of distribution substations even in metropolitan areas. This of course will have some bearing on the number of relays and devices required to take the place of the attending operator. Here again it is necessary for the distribution and the substation engineers concerned with design to coordinate their thinking so that overall satisfactory operation of the distribution system can be obtained with the minimum accessories.

Fig. 16—Photograph of Building Exterior for Diagram in Fig. 14

The subtransmission system available for supplying a distribution substation has an important bearing on the size and number of transformers and on the

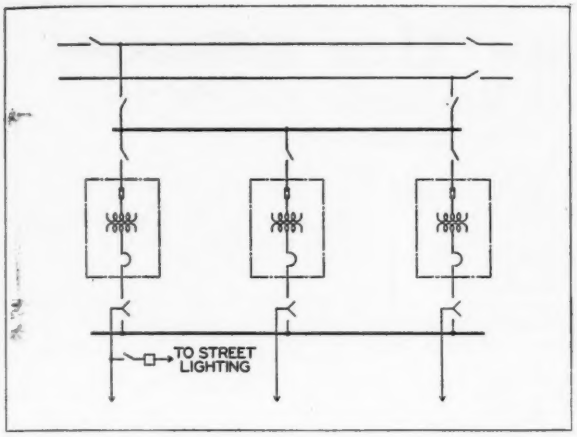


Fig. 17—Single-Line Diagram—Substation "G"

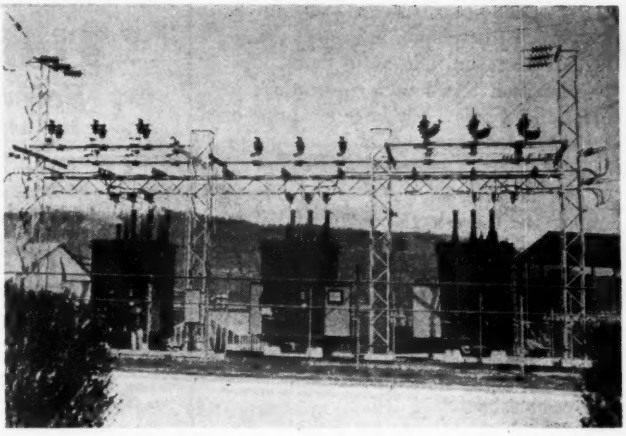


Fig. 18—Photograph of Equipment for Diagram in Fig. 17

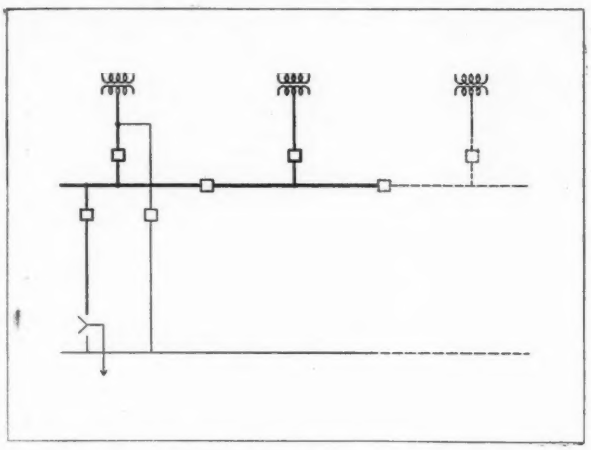


Fig. 19—Basic Diagram for Single Sectionalized Bus Layout. Solid Lines Indicate Basic Elements To Which Can Be Added Items Shown By Lighter Solid Lines. Dotted Lines Indicate Additional Transformers and Bus Sections That Can Be Added

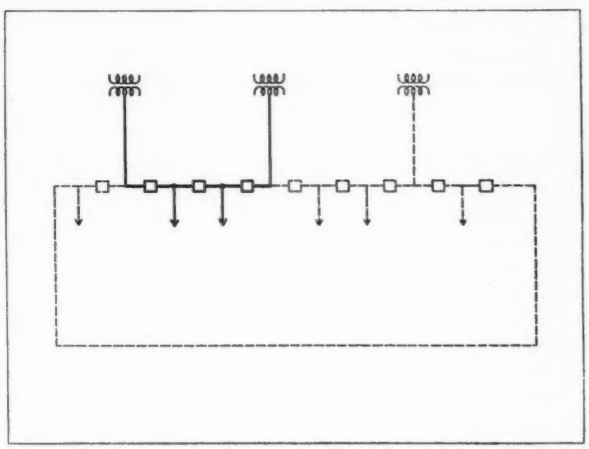


Fig. 20—Basic Diagram for Duplex or Double-Ended Unit Indicated by Solid Lines. Dotted Lines Indicate Possibility For Expansion

switching and protective elements included in the layout. If it is decided to adopt a unit line-transformer scheme with no high-tension busses, the selection of transformer capacities will depend upon the supply line capacity and whether or not the lines are tapped for supplying other loads. Transformer capacities, number of banks and protective schemes will be influenced also by physical conditions of the transmission lines (separation over different routes, overhead or underground construction and potential hazards) and on whether the supply is from one, or more than one, source.

Here again, many variable factors bear on the problem and there is ample opportunity for individual ideas. On the other hand, a few basic layouts could be applied to several schemes and one of these probably would be applicable to the ma-

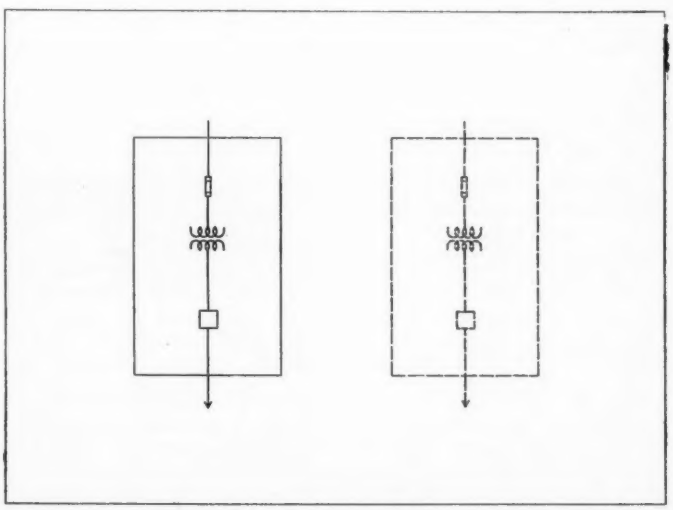


Fig. 21—Basic Diagram For A Unit Substation. Dotted Lines Show Possibility of Using More Than One Unit At A Location. A Transfer Bus Can Be Added If Desired (See Fig. 17)

jority of conditions encountered on most systems. In developing a group of basic layouts some latitude as to detail must be permitted to allow for variations in individual systems but in general one of these arrangements should be acceptable in most cases.

The advantages of such an agreement among the users have been discussed in the past and there appears to be reasonably good acceptance of the fundamental idea. This may be the answer we are all seeking to reduce costs against rising prices and long equipment deliveries where engineering and drafting have an appreciable effect on delivery time.

In order to observe the trend of distribution substation design, several of the committee representatives have kindly submitted drawings and photographs representing their latest ideas of typical distribution substation layouts. This information reveals quite a wide variety of designs all aiming at the same objectives. The variance among the different designs brings out forcibly that, although we are all striving to accomplish the same things, our specific methods have differed widely, influenced no doubt by the items mentioned at the beginning of the paper, including system conditions, policies and philosophies, and personal desires of the designing engineers.

Time does not permit a complete description of each of the designs submitted but a few have been selected as representative of the latest thoughts on distribution substation layouts.

The layouts shown in Figs. 1, 3, 6 and 9 have similar characteristics in general. With only minor exceptions they all follow the single sectionalized-bus pattern. The layout in Fig. 12 also fits this pattern by omitting the sectionalizing breaker. The basic layout shown in Fig. 17 could be applied in each of these cases by including or omitting certain elements such as the transfer bus, transformer feed to the transfer bus or the sectionalizing breaker.

The arrangement shown in Fig. 14 is an adaptation of the duplex or double-ended unit. Fig. 20 suggests the possibility of expanding the basic duplex type of arrangement to any number of transformers and circuits that may be desired and still follow the basic scheme.

In Fig. 18, a group of unit substations is used, each supplying a single distribution circuit with transfer-bus connections. This type of substation can be used in various quantities and arrangements without deviating from the basic scheme shown in Fig. 21 seen on page 49.

An analysis of sixteen distribution substation layouts (in general, similar to those illustrated) indicates that one of the three basic arrangements shown in Figs. 19, 20 and 21 would probably be adaptable to all of them. This statement must be interpreted broadly because certain compromises and perhaps concessions would be necessary on the part of some designers before they could accept one of the basic arrangements. Also it may be necessary in some cases to make minor modifications in applying the basic layout. This should not be particularly difficult and certainly it is not impossible.

If such a goal could be attained there would undoubtedly be cost savings for those who could arrange their thinking to fit one of the basic arrangements. To bring such a project to a successful conclusion a broad and tolerant viewpoint would be necessary. It appears to the author, however, that such an undertaking has merit and that the results would be commensurate with the effort required. Although distribution substations may be responsible for only a small percentage of the electric system investment, it is true that regardless of percentage every dollar saved is a step in the right direction.

Thomas Alva Edison--

Scientist, Benefactor and Patriot

By HARRY H. SCHLACHT

WE commemorate
the 102nd anniversary of the birth
of Thomas Alva Edison.

* * *

**He epitomizes America
at its very best.**

* * *

We salute the American and patriot.
We honor the scientist and humanitarian.
We hail the great benefactor of mankind.

* * *

**He gave us the dawn of
a new civilization.**

* * *

Millions of people today, with the rise of the sun, march to the workshops, their tread a paean to Edison whose wizardry made live the whirling wheels, the vibrant wires and woke new powers of service for all mankind.

* * *

**He has made the night bright
for all humanity.**

* * *

Edison's life is the story of progress.
His ideal was service to mankind.
His monument is in every home.
His epitaph is written in every heart.

* * *

**He rose from humble beginning
to membership among the leaders of men.**

* * *

He was a precious asset to the world.
He was the universal lamplighter.
He was the father of American industry.

* * *

**He gave light and understanding
to the world.**

* * *

He was a mighty conqueror.
He conquered the elements.
He flashed thought over the continents.
He garlanded the cities in light.

* * *

Edison never created an electric light which shone with greater brilliance than his own noble character.

* * *

He struck the shackles from the backs of millions.
He lighted the pathway of art and science and industry.
He made light a social force.
He brought happiness to the humblest.

* * *

**How shall we rank thee on history's pages?
Thou are more than a scientist,
And just less than a sage?**

* * *

Wherever there is an incandescent lamp,
wherever there is a phonograph,
wherever there is a radio,
wherever there is a motion picture—
silent or sound,
Edison will live.

* * *

**He stands as a shining symbol of America.
He rises in glorified silhouette against the horizon of the ages.**

* * *

Edison's life gives renewed confidence that our institutions hold open the doors of opportunity to all those who would enter.

* * *

Our American civilization is like a garden.
As we fertilize its soil of liberty, as we maintain diligence in its cultivation, as we exercise vigilance against destructive forces, we produce those blossoms, the fragrance of whose lives gives stimulus to renewed endeavor, gives courage to renewed effort and gives confidence of the future.

* * *

Thomas Alva Edison was a glorious product of American opportunity.

* * *

If he could speak to us today, he would undoubtedly say:
Let us be American.
Let us be loyal to our country.

* * *

Let us adhere to the principles of personal initiative.
Let us adhere to our system of American free enterprise.

* * *

Let us urge cooperation among all classes of citizens.
Let us work for the good of all which has made our nation the hope of civilization.

* * *

**Let us have faith.
Let us go forward.**

Reprinted courtesy of the New York Journal-American, *Feb. 11, 1949*

Thirty-Five EEI Resuscitation Medals Presented for Quick, Effective and Unselfish Actions of Power Company Employees

By Mae B. Woods
Secretary, Committee of Judges, Edison Electric Institute Medal

ALERTNESS and skill in life-saving techniques have been given signal recognition in recent months, with the awarding of thirty-five Edison Electric Institute Medals for Resuscitation. The largest number of awards to be reported in a single year, the presentations bring to more than 250 the total of awards made since the Medal was originally authorized in 1933.

When the lives of their fellow workers hung in the balance, the recipients of these awards were quick to respond with effective and unselfish action, as the brief but implicitly dramatic stories of individual cases testify. Fifteen of these accounts appear below, while the remaining twenty will be carried in the March issue of the BULLETIN.

Object Lessons from Medal Stories

A study of these accounts also reveals that many of the accidents need not have happened at all. With proper planning of the job to be done, with the exercise of caution in approaching unknown hazards, with the proper use of protective equipment, the victims of these accidents might well have been spared injury and possible death, and their comrades the anxiety and risk of their own lives through exposure to shock hazards at time of rescue.

As these cases prove, chances should not be taken, even in the most routine tasks. Familiarity with a given task seems too often to breed contempt for the possible or probable hazards involved, instead of inspiring the wholesome respect and caution which experience and knowledge should give. Records show that only a small percentage of electric shock and burn accidents take place under emergency conditions following summer and winter storms. The great majority of the cases occur when the worker has relaxed his guard for even the briefest period under everyday conditions. These case histories are object lessons which have been painfully learned.

EEI RESUSCITATION MEDAL

Additional resuscitation cases on which data have recently been sent to the Institute are under consideration by the Judges for awards. The committee consists of Wills Maclachlan, Toronto, Canada; J. M. McCann, Newton Centre, Mass.; and W. R. Smith, Newark, N. J.

The Edison Medal, for which employees of all electric light and power companies are eligible, is not only a symbol of humanitarian achievement, but has historical value as well. Included in the composition of the metal from which the awards are struck is copper from the original mains laid down in New York City by Thomas A. Edison as part of the first underground system in the world for supplying current for electric light and power.

With each medal awarded, presentation is also made of a certificate describing the resuscitation and signed by the President of the Institute. To those who have rendered valuable aid in the resuscitation, Certificates of Assistance are awarded. Miniature medals and certificates are also awarded to members of line crews who have participated in cases of successful resuscitation.

Accounts of the events which resulted in recent presentations of the Edison Medal follow:

DIVISION LINE CREW NO. 1
Central Illinois Public Service Company
Springfield, Illinois

Foreman William F. Ortgessen and his three-man line crew spent most of the morning of June 16, 1945 trying to find the cause of an abnormal noise condition in the company telephone line. Checking the line carefully with a standard telephone test set, Ortgessen and his crew located the trouble between Virginia and Jacksonville, Ill. At the next sectionalizing point, Literberry, the test set was suspended from a lag screw which had been driven into the disconnect pole at a point five feet above the ground.

While lineman Robert Lindley climbed the pole and connected one lead of the test set to one wire of the telephone circuit, Ortgessen put on his rubber gloves, went to the test set, and picked up the receiver. He placed the receiver against his left ear, and was knocked to the ground by an electric shock.

Lineman Charles Bates, standing only three feet away when the accident occurred, immediately rolled the unconscious man over, and began applying artificial respiration. He called to Lindley on the pole, and sent helper Ruel Vincent to call a doctor. Lindley came down the pole and assisted Bates in applying artificial respiration. The two linemen worked twenty minutes before the injured man showed signs of life. By the time a doctor arrived, Ortgessen was sitting up, and, following the doctor's examination, was driven to his home.

The noise in the telephone circuit and Ortgessen's accident were both caused by one wire of a three-phase 6900-v circuit which had been pressed down on both wires of the telephone circuit by a large tree branch about a mile away from the scene of the accident.

Presentation of the Edison Medal and Certificate to RICHARD HILLAS, (right) made by R. W. Smith, President of the Orange & Rockland Electric Company, (left) on April 1, 1947, at Goshen, N. Y.

ALFRED G. JOHNSON, (standing, right) received the Edison Medal, for the successful resuscitation of foreman, Charles Mattinen (standing, left). Fellow Minnesota Power and Light Co. crew members who took part in the rescue are, left to right: Carl Gustafson, Ernest Korbi, Lester Swanson and W. Olson.

Presentation of the Edison Medal to the line crew was made at a meeting of about 60 employees of Central Illinois Public Service on March 24, 1947. In addition to presenting the medal to the line crew as a whole, Don T. Lacey, Manager of the Personnel Department, awarded replicas of the medal to Robert Lindley and Charles Bates, and a certificate of assistance to Ruel Vincent.

RICHARD HILLAS
Orange and Rockland Electric Company
Monroe, New York

After a severe rainstorm in the morning of July 21, 1944, a line repair crew was working on a 2300-v line beside a concrete highway at Pine Island, N. Y. Maintenance electrician George Gillespie was splicing out a burned-out conductor on a single-phase ungrounded rural feeder.

Gillespie, without proper protective equipment, picked up in both hands what he thought was a de-energized conductor. An 1150-v electric shock passed through his body to his feet. Richard Hillas, first class lineman, reacted instantly and pulled the conductor from Gillespie's hands. Gillespie was unconscious and his face had turned bluish in color, when a moment later Hillas started resuscitation by the prone-pressure method. Victor DeMouth, in charge of the crew, loosened Gillespie's clothing and removed his false teeth.

Gillespie first responded to artificial respiration after twenty-five minutes. Five minutes later he was breathing without assistance. He was able to sit up by the time medical assistance had arrived. A hypodermic was administered and Gillespie was taken to a hospital in Warwick, N. Y., where he recovered completely.

Richard Hillas received the Edison Medal at a company dinner attended by 100 fellow employees at Goshen, N. Y. on April 1, 1947. Roscoe W. Smith, President of the Orange and Rockland Electric Co., made the presentation. An account of the ceremony was carried in the *Middletown Times Herald,* Middletown, N. Y., April 2, 1947. A similar award, made to Charles Beach, another O & R employee, at the same ceremony, was reported in the February 1948 EEI Bulletin, page 55.

ALFRED G. JOHNSON
Minnesota Power & Light Company
Duluth, Minnesota

Called out on the evening of June 24, 1946, to repair an outage on a 22,000-volt line, foreman Charles Mattinen and his line crew finally located the break several miles outside of Sturgeon Lake, Minn., and repaired it with an automatic splice.

They returned to Sturgeon Lake a few hours before midnight under a threatening sky to hook up their telephone set and report the job completed. Mattinen went up the pole, connected the phone, then came back down to make his call. Lineman William Olson then climbed the pole to be ready to disconnect the phone when Mattinen had finished his report. Mattinen had spoken a few words, when suddenly he received an electric shock and fell unconscious to the ground. Lineman Ernest Korbi, standing near him, tried to pull him from the telephone, but the victim's clothes were wet, and Korbi was thrown to the ground by the current.

Lineman Alfred G. Johnson brought a piece of rope from the truck, took a turn around Mattinen's feet, and pulled him clear of the circuit. Johnson immediately began artificial respiration, while linemen Lester Swanson and Korbi ran to call a doctor. Olson, after pulling off the telephone drop cord, came down the pole and assisted Johnson. Within fifteen minutes, Mattinen was breathing without assistance, and, after the administration of first aid, he was taken to the hospital.

It was later discovered that the automatic line splice had failed, and one phase of the 22,000-volt circuit had fallen across the high line telephone wire, while Mattinen was using the phone.

At a presentation banquet held on December 20, 1946, M. L. Hibbard, President of Minnesota Power & Light, presented the Edison Medal to Alfred Johnson and honored the other members of the crew for their part in the rescue. Highlighting the ceremony was the eloquent simplicity of Mattinen's statement: "Thanks, Al, for saving my life."

EMERSON M. DAVIES
Pennsylvania Power Company
New Castle, Pennsylvania

Two linemen, George Maxwell and E. M. Davies of the Pennsylvania Power Company were replacing a crossarm on a pole in New Castle, Pa., on October 4, 1946. The 4-pin crossarm was carrying a 4800-v primary circuit. Approximately two feet below the arm was a 3-wire secondary attached to a rack on the pole.

Maxwell had straddled the secondary wire to work on the 4-pin crossarm, and Davies was standing in his hooks and safety belt opposite him on the pole and slightly below. While the two men were passing line hose between them, Maxwell placed his right hand on a primary conductor and at the same time brought his right leg into contact with the secondary. The shock passed from his right hand to the inside of his right leg above the knee.

Davies, after several attempts, freed Maxwell's right arm from the primary. Without changing his position on the pole, Davies pulled Maxwell close to him and immediately started pole-top resuscitation. No more than 15 strokes of artificial respiration were given before Maxwell regained consciousness and was able to breathe unassisted. Maxwell was lowered from the pole with the assistance of Clarence Murphy, who was in charge of the crew. First aid for burns was administered on the ground and Maxwell was taken by ambulance to Jamieson Hospital, New Castle, Pa., where he was treated for shock and placed under observation.

Presentation of the Edison Medal to E. M. Davies was made by Thomas L. Paden, superintendent of operations, Pennsylvania Power Company, at a company banquet attended by 1000 employees on December 18, 1947. George Maxwell was present to pin the medal on his rescuer. The presentation was reported by the *New Castle News* on December 19 and 20, 1947.

Presentation of the Edison Medal to EMERSON M. DAVIES: (reading left to right) T. L. Paden, Supt. of Operations, Pennsylvania Power Co., who presented the Medal; W. H. Luikart, Supt. of Lines; C. Murphy, Foreman of crew; Mr. Davies; G. Maxwell, whose life was saved; and K. A. Cotton, General Line Supt.

SHREVEPORT LINE CREW

Southwestern Gas and Electric Company
Shreveport, Louisiana

Lineman Starley Hendrix, a member of foreman S. L. Frizzell's four-man line crew, climbed a transformer pole on Tidwell Road, Shreveport, on the afternoon of June 20, 1946, and prepared to pull secondary conductors.

Inadvertently, he touched with his right hand the phase wire of the single-phase 11,000-volt circuit on the pole, and the current surged through his body to his feet. Shocked into unconsciousness, his face purple, Hendrix sagged away from the contact and fell to the ground.

Helper Cecil E. Sanders immediately came to his assistance, and for fifteen minutes Sanders and linemen J. Oran Kirkpatrick and Perry L. Bonds applied prone-pressure artificial respiration. At the end of that time, Hendrix was able to breathe without further help.

An ambulance had been called, and at the hospital Hendrix was treated for extreme shock, 3rd degree burns of the left foot and left hand, and the loss of two fingers of the right hand.

On April 28, 1948, about 200 employees and guests were present at a Safety Party, at which Frank M. Wilkes, President of Southwestern Gas and Electric, awarded the Edison Medal to the crew as a whole, and presented replicas of the medal and certificates to individual crew members. The ceremony was reported the following day in *The Shreveport Times*.

EDWARD E. JULIAN

Gulf States Utilities Company
Baton Rouge, Louisiana

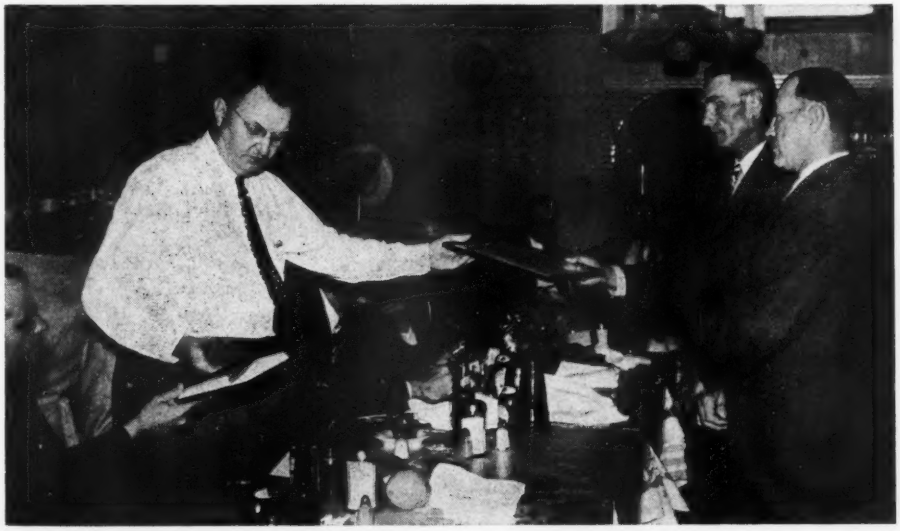
In a pouring rain on the afternoon of May 31, 1946, a crew of six laborers and supervisor of the G. W. Garig Transfer Co. and Edward E. Julian, substation mechanic for the Gulf States Utilities Co., were replacing a 333-kva transformer at the Grosse Tete Substation, Grosse Tete, La. This substation transformed 66 kv to 33 kv for transmission and to 2.4 kv for distribution.

One transformer had been removed from its foundation, and its replacement, loaded on the rear of a truck trailer, had been backed to the transformer foundation in the substation yard. A half-inch heavy chain, passed over the top of the transformer, was fastened securely to the trailer body. In this position the transformer on the trailer was directly under a 66-kv dropout fuse with a clearance of 5 ft.

The transformer was placed on rollers to be moved to its foundation. One end of the chain was unfastened from the trailer. Without instruction, John Pooler, a laborer for the transfer company, climbed to the top of the transformer to remove the chain. Pooler threw the chain back over his head and his body instantly became rigid as the chain struck the 66-kv dropout. The right side of his head then came in contact with the bottom of the dropout.

Julian took a 15-ft hotstick, placed it behind Pooler's knees, pushed forward and broke the electrical contact. Unconscious and with no pulse, Pooler was removed to the ground, wrapped in raincoats to keep him dry and within one minute of the shock Julian began artificial respiration by the prone-pressure method. Ten minutes later Pooler gasped and began to breathe lightly. In another two minutes Pooler's breathing was normal. Pooler was taken to a hospital in Baton Rouge, where he was treated for 3rd and 4th degree burns of the scalp and head, and 2nd and 3rd degree burns of the chest, right arm, abdomen, left hand and both feet.

Edward E. Julian was presented the Edison Medal and certificate by Vice President



F. M. Wilkes (standing left), President of the Southwestern Gas & Electric Co., presents Edison Medals and Certificates to Shreveport Line Crew represented by Foreman S. L. FRIZZELL (second from right) and PERRY L. BONDS (right).

EDWARD E. JULIAN, Gulf States Utilities Co. receives the Edison Medal.

H. C. Leonard, Gulf States Utilities Co., at an annual T & D Safety meeting on August 26, 1948 in Baton Rouge, La. The citation stated that "only the quick thinking and efficient actions" of Julian saved Pooler's life. An account of the meeting and presentation was given in the *Morning Advocate,* Aug. 27, 1948.

E. R. BASOM
Idaho Power Company
Boise, Idaho

On loan to substation foreman Elson R. Basom for the day, apprentice lineman Wilburn E. Barker was inside the Oakley Substation on March 4, 1947, cleaning a transformer case with a rag.

Barker climbed up on the transformer platform, working higher than Basom had instructed him, and contacted a 12,500-volt bushing on the transformer case. The current passed through his body from hand to hand, and he fell unconscious to the floor.

Basom, who had not been in a position to observe Barker when the accident occurred, got to him about thirty seconds later and began applying prone-pressure artificial respiration. About four minutes later, Barker was breathing, and after seven minutes of resuscitation, he could breathe without assistance. At the hospital, Barker was treated for 1st and 2nd degree burns of both hands and the left wrist.

At an employee dinner in December, 1947, Elson R. Basom received the Edison Medal and certificate from T. E. Roach, general manager and executive vice president of Idaho Power. In making the presentation, Mr. Roach said, "Because Mr. Basom understands first aid and was able to use it intelligently and quickly, a fellow workman's life was saved. His recovery was complete."

T. E. Roach (left), General Manager and Executive Vice President of Idaho Power Co., presents the Edison Medal and Certificate to Elson R. Basom (right).

E. R. NELSON'S CREW
Alabama Power Company
Birmingham, Alabama

A new 44-kv line was being run from Fig Tree to Plantersville, Alabama, and on the morning of December 5, 1946, E. R. Nelson's eleven-man crew began to set poles for it.

Each of the new poles was about 60 ft long and equipped with all the necessary equipment for the new line. As the crew made preparations for raising one of the poles, they failed to notice a two-wire, 12-kv line which ran almost at right angles to the line they were preparing. The lowest wire of the 12-kv line was not over 25 ft above the ground at the point where the new pole was to be raised.

With the rigging complete and the men stationed at various points with guys to the line pole and the gin pole, the raising was begun. A tractor with a winch was being used, and lineman Dolphus McDowell was standing near it, guiding the cable onto the winch with both hands. Nelson was standing near him, with one hand on the winch cable.

When the pole attained sufficient height, it began to slide back towards the hole which had been dug for it. Lineman J. W. Hornsby was at the butt end of the pole using a cant hook to guide it. He had his hand on the ground wire fastened along the pole, when some part of the pole or its apparatus touched the 12-kv line overhead.

Hornsby received a shock but was not rendered unconscious. Nelson was knocked down, but immediately regained his feet. McDowell, unconscious, his face blue, was still in contact with the winch cable.

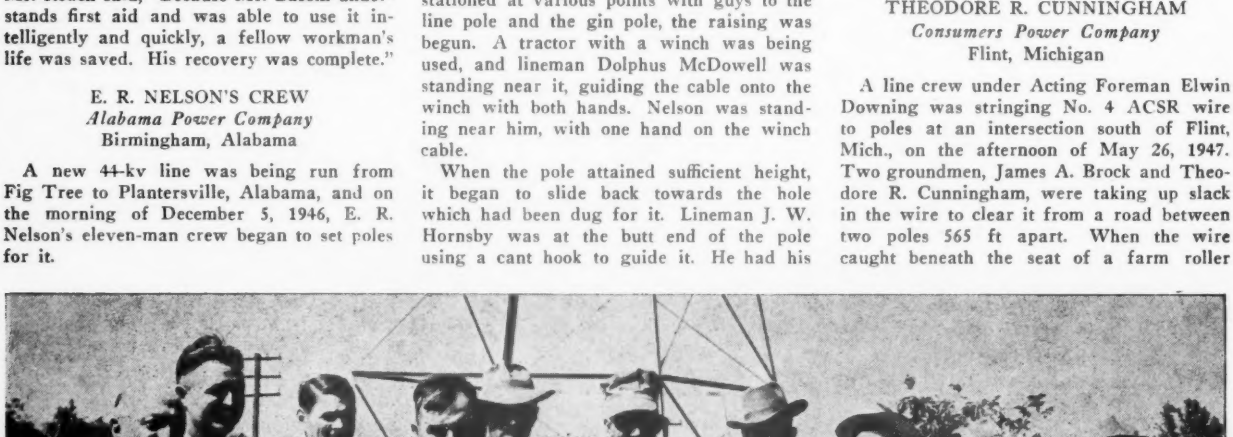
The tractor operator, H. E. Green, had been watching for signals at the moment of contact. As fire began to fly around his machine, and shouts of "stop" came from the crew, Green quickly knocked the winch out of gear, letting the pole fall and breaking the contact.

McDowell fell from the cable, and immediately the members of the crew began giving him artificial respiration. Working in shifts, they were able to bring him around in about an hour when he was finally able to breathe without help. Taken to a hospital in Selma, McDowell was treated for shock and burns.

At presentation ceremonies at the site of the Magella-Birmingham 110-kv tower line, now under construction, F. C. Weiss, vice president in charge of the engineering and construction department of Alabama Power Company, awarded the Edison Medal to the crew as a unit. Replicas of the medal and certificates were given to each member of the crew which included, besides Nelson, Hornsby, and Green, the following men: George M. Greene, Hugo Mackey, Elva Pope, Charles R. Toland, J. J. Mackey, J. B. Royster, O. B. Guthrie, and McDowell's brother, Charles.

THEODORE R. CUNNINGHAM
Consumers Power Company
Flint, Michigan

A line crew under Acting Foreman Elwin Downing was stringing No. 4 ACSR wire to poles at an intersection south of Flint, Mich., on the afternoon of May 26, 1947. Two groundmen, James A. Brock and Theodore R. Cunningham, were taking up slack in the wire to clear it from a road between two poles 565 ft apart. When the wire caught beneath the seat of a farm roller



E. R. Nelson's Crew receive Edison Medals and Certificates from F. C. Weiss, Vice President in charge of Engineering and Construction Department, Alabama Power Co. Left to right: Mr. Weiss, D. McDowell, H. E. Green, E. R. Nelson, J. J. Mackey, H. Mackey, J. B. Royster, C. R. McDowell, G. M. Greene and E. M. Pope.

THEODORE CUNNINGHAM (right) is presented with the Edison Medal and Certificate by Division Manager Arthur Crawley, Consumers Power Co. (left) as J. A. Brock (center) who was resuscitated, looks on.

W. H. Doran, Executive Vice President of Metropolitan Edison Co. (right), presents the Edison Medal and Certificate to CHARLES E. ILGENFRITZ (center) while J. E. Wayne, Division Manager (left) looks on.

between the two poles, another groundman cleared it.

Tension on the wire caused it to spring upward and momentarily contact a 4800-v energized primary strung nearby. Brock and Cunningham were knocked to the ground by the momentary contact. Both men stood up at once, but Brock sank to the ground in a few seconds, unconscious and not breathing. Cunningham at once began artificial respiration using the prone-pressure method. Within 3 minutes Brock showed signs of life. Cunningham stopped artificial respiration and Brock ceased breathing again. Cunningham resumed artificial respiration and two minutes later Brock was able to breathe without aid. Brock was then wrapped in blankets brought from a nearby house. Foreman Downing called the ambulance which took Brock to a hospital in Flint, where he was treated for burns on the right arm and shoulder.

T. R. Cunningham received the Edison Medal and certificate on March 23, 1948 at an anniversary dinner at Flint, Mich. Division Manager A. J. Crawley, Consumers Power Co., made the presentation.

CHARLES E. ILGENFRITZ
Metropolitan Edison Company
Reading, Pennsylvania

A three-man line crew of the Metropolitan Edison Company examining blueprints of a newly installed transformer bank on the afternoon of April 23, 1947, heard an arc from a 13.2-kv line near the top of a building about 100 ft away. Charles E. Ilgenfritz looked up to see James Jamison, a tinsmith and roofer, slump to the ground beneath the power line. Ilgenfritz, utility man, first class, and the two other crew members ran to the victim and found him unconscious from electric shock. Ilgenfritz immediately began artificial respiration and with the aid of his fellow crew members revived Jamison in three minutes.

Jamison, who was employed by the Leroy Roofing Company, Harrisburg, Pa., had made contact with a 13,200-v conductor while installing rainspouting on a new aluminum building of the Schweitzer Paper Company, Mount Holly Springs, Pa. In lifting a 26-ft section of spouting from the ground to attach to the building he brushed it against a three-phase 13.2 kv line which ran about 30 feet above the ground from a pole-top switch to the transformer bank.

Jamison was examined by a doctor at the scene of the accident and was sent to his home for treatment of minor burns.

C. E. Ilgenfritz was presented with the Edison Medal and certificate by W. H. Doran, executive vice president, Metropolitan Edison Company, at a testimonial dinner on May 11, 1948 at Boiling Springs, Pa.

DAVID W. SMITH
and
NATHAN L. MOTT
Texas Power & Light Company
Dallas, Texas

In the process of converting a rural line near Cameron, Texas, from 4160 volts to 7200 volts, August J. Prcin and Nathan L. Mott, lineman's helpers, were installing disc insulators on a pole during the morning of July 30, 1947. As they worked, they were watched from the ground by their supervisor, L. W. Nichols, and lineman's helper, David W. Smith.

In pulling the key from the second disc insulator, Prcin moved his right arm against one of the energized wires, above his rubber glove. He was shocked into unconsciousness. To break the contact, Mott kicked Prcin's left hook out of the pole, while Smith climbed the pole to help him. Smith gave pole-top resuscitation, while Mott held the unconscious man away from the conductors and kept him from falling to the ground. After several minutes Prcin began to breathe.

Smith and Mott then began to walk down the pole with the injured man in a sitting position on their safety belts. Prcin, however, stopped breathing again, so they halted,

John C. Young (right), Vice President of Texas Power & Light Co., presents the Edison Medal and Certificates to NATHAN L. MOTT and DAVID W. SMITH. Left to right: W. I. Alexander, Supt. Construction, T. D. Hughston, Safety Engineer, Mr. Smith, A. J. Prcin, who was rescued, Mr. Mott and Mr. Young.

HARRY G. MULL (second from right) receives the Edison Medal and Certificate from C. S. Walters, Vice President and General Manager of Carolina Power and Light Co.'s Western Division (right). Certificates of Assistance went to W. H. CAGLE and J. C. STINSON (first and second from left, respectively).

and Mott applied pole-top resuscitation until Prcin once more began to breathe. This procedure was repeated four times before they were able to get Prcin safely to the ground, where they continued to apply artificial respiration. Finally breathing without aid, Prcin was removed in an ambulance to the hospital, where his burns were treated.

More than 175 employees of Texas Power and Light were present at the site of the new West Waco substation on August 5, 1948, when the Edison Medal was awarded to Nathan L. Mott and David W. Sm'th. The presentation was made by Vice President John C. Young, who also awarded each of them a replica of the medal and a certificate.

August J. Prcin, pointing out that "it would be impossible to express my appreciation properly," said of his rescuers, "My life was in their hands last year and they were able to give it back to me again."

HARRY G. MULL
Carolina Power & Light Company
Black Mountain, North Carolina

Lineman trainee Alan F. Moore had been ordered by his foreman, G. W. Fain, to remove street lighting fixture attachments from a pole at an intersection in Black Mountain, N. C., on October 27, 1946. Moore removed the suspension guy and pulley and, in the absence of the foreman, proceeded to climb above a secondary circuit to cut the street lamp leads on the lowest crossarm. While strapping his safety belt about the pole, his right forearm touched a primary jumper from the energized 11,000-v primary circuit above him.

Moore sustained a severe shock. He fell head foremost from the pole and caught a hook of his safety belt in temporary wiring below the secondary which broke his fall momentarily. Moore landed on his right shoulder and was quickly reached by his fellow crewmen. Harry G. Mull, first on the scene, began artificial respiration by the prone-pressure method at once. Linemen W. H. Cagle and L. V. Lylerly spelled him in applying artificial respiration. J. C. Stinson, lineman, cleared Moore's mouth and applied tannoid to the burns on his back. Four minutes after the shock, Moore became conscious and two minutes later could breathe without assistance. A doctor, who was passing by at the time examined Moore, gave first aid and accompanied him in an ambulance to a hospital. Moore sustained no fractures from the fall, but had to be treated for 3rd degree burns of the back, right arm and left leg and a badly sprained right knee joint.

Presentation of the Edison Medal was made to Harry G. Mull in a ceremony at a power worker's safety meeting. C. S. Walters, vice president and general manager of Carolina Power & Light Co.'s Western Division made the presentation. W. H. Cagle and J. C. Stinson also received Certificates of Assistance.

CHARLES ALBERT TUCKER
and CURTIS C. GRIFFIN
Southwestern Public Service Company
Amarillo, Texas

The installation of a new power transformer on a pole in Amarillo, Texas, had just been completed on the afternoon of July 25, 1947, by linemen M. L. Johnson and Charles A. Tucker. Their foreman, Curtis C. Griffin, who had been directing the work from the ground, asked for readings from the new transformer and a lighting transformer, also mounted on the pole, connected with the power transformer in open delta.

A reading on the lighting transformer proved to be satisfactory, but the power transformer test was 120 volts too high. Tucker opened the fuse disconnect on the power transformer, and Griffin asked Johnson to swing around to check the data on the transformer plate to be sure that the transformer was of the proper voltage.

In maneuvering to read the data on the plate, Johnson touched the neutral with his

Vice President J. G. Ausman, Southwestern Public Service Co. (left) presents the Edison Medal award to C. C. GRIFFIN (center) and C. A. TUCKER (right).

right leg, the data plate with his finger, and the transformer case with his chest. Tucker suddenly felt the pole quiver and, looking down, saw Johnson hanging in his safety belt.

"I'll be all right," Johnson said, and lost consciousness. He hung head down in his belt, about five feet below Tucker, who immediately started down to help him. After Tucker had worked below the victim, he managed to get Johnson seated on his safety belt. Prying open Johnson's mouth, Tucker recovered the unconscious man's tongue, which had been swallowed, and began pole-top resuscitation.

In the meantime, truckdriver M. G. Wiggins had called for an ambulance over the truck's mobile radio, and foreman Griffin had started up the pole. Griffin loosened Johnson's safety, and helped bring him down the pole, while Tucker gave pole-top resuscitation all the way to the ground. Here Griffin began prone-pressure artificial respiration, and shortly thereafter Johnson was breathing without assistance. At this point, the ambulance arrived, and Johnson was taken to the hospital where he was treated for shock and 2nd degree burns.

Investigation disclosed that during the reconnection of the transformers, the jumper that tied the transformer case and primary grounds to the system neutral had not been reconnected. Thus the transformer case was energized, and when Johnson touched the secondary neutral with his leg and the transformer with his chest, he received a shock of about 2,000 volts.

At a presentation ceremony, J. G. Ausman, vice president of Southwestern Public Service Company, awarded the Edison Medal jointly to Charles Albert Tucker and Curtis C. Griffin. Each man also received a replica of the medal and a certificate. The presentation was the subject of the lead article in the employee magazine, *The Southwesterner*, of October, 1948.

Foreman E. C. HIDDE (left) of the Wisconsin Public Service Corp., receives the Edison Medal and Certificate. HAROLD PETERSON (center) and DON JOHNSON (right), received Certificates of Assistance for a successful resuscitation.

ERNEST C. HIDDE

Wisconsin Public Service Corporation
Milwaukee, Wisconsin

Linemen Hugh Helmer and Don Johnson, who had completed a transformer change on a pole in Spruce, Wisc., on the midafternoon of July 10, 1947, were waiting for Foreman E. C. Hidde to test the voltage at a nearby farmhouse. In his position below the secondary on the pole, Helmer noticed that the handline was still attached to the crossarm and reached forward to remove it. Ordinarily the handline would have been removed with a hot stick. Helmer, however, reached through the secondary risers and over a 13,800-v lead, extending from the bottom of the cutout to the transformer bushing, and came in contact with the lead.

Helmer lost consciousness and slumped in his belt, sagging clear of the circuit. Johnson's safety belt, which was below Helmer's, kept the injured man from sliding down the pole until Johnson was in position to "walk" Helmer to the ground. When they reached the bottom of the pole, Hidde immediately started artificial respiration by the prone-pressure method and, with the help of lineman Harold Peterson, revived Helmer in about 9 minutes. A heart stimulant was administered by the doctor who had been summoned by the crew and an ambulance carried Helmer to a hospital in Oconto, Wisc. Helmer sustained 3rd degree burns above the right hip and right arm, close to the armpit.

Foreman E. C. Hidde was awarded the Edison Medal for his prompt actions and Certificates of Assistance were given to Linemen Harold Peterson and Don Johnson. The presentation was made by C. E. Kohlhepp, President of Wisconsin Public Service Corp., at an employees meeting in Oconto, Wisc. on April 26, 1948.

C. E. Kohlhepp, President of Wisconsin Public Service Corp. (left) congratulates ELMER PROCESS on receiving the Edison Medal and Certificate while ROY CHAPPELLE (second from right) and R. C. STRAUB (right) who were awarded Certificates of Assistance, look on.

ELMER PROCESS

Wisconsin Public Service Corporation
Milwaukee, Wisconsin

"Voltage from an open secondary on a current transformer, unknown but high enough to be dangerous to life," was close at hand as electrician Earl Nelson and his helper, Jerry Fostner, were transferring meter wiring from one terminal block to a new, larger one replacing it at the Bayside Steam Station, Green Bay, Wisc., on the afternoon of July 22, 1947. A jumper on the current transformer wires slipped off and Nelson picked it up, placing himself in the circuit to ground. When he fell backwards, his left hand remained frozen to the trans-

(*Continued on page* 58)

National Trends

(*Continued from page* 36)

ernment officials have incorporated them under the laws of Delaware and other states. They have the form and structure of private corporations, but behind them in their competition with private enterprise, they have the credit and finance and power of government.

So far as business is concerned, therefore, we have had two definite trends. One a tendency of business itself to seek government sponsorship and aid, the other the tendency of government to go into business on its own account to compete with private effort.

There has been an elimination of purely wartime controls; but regimentation, regulation of business, and government in business provide too many jobs and political patronage—too much political influence to be given up by any party in power except as the result of something in the nature of *a revolution in the general materialistic philosophy and economy of Americans* in all groups. Labor as well as business, educators and professional classes, including lawyers and doctors, look for favors at the hands of the government in Washington rather than stand on their own and survive or perish as free men.

One grows exceedingly weary of hearing how the so-called free enterprise system is on trial. On trial for what? Has any other system accomplished so much or provided such standards of living? It is socialism that is on trial as in England, and communism that is on trial as in Russia. It is individual enterprise that is being asked now to provide the food, the money, and the tools to rebuild Europe. Americans should be on guard against the insidious efforts constantly made to discredit a system that has not only been responsible for the nation's growth and progress, but is so strong and virile that it is at this very time underwriting and sustaining the shattered economies of Europe.

But, I am afraid, the overall trend and the basic error is to view life and all man's activities and relationships in terms of mere economic or material values, and to make economics and the supposed economic well-being of man the criterion of all action, personal as well as governmental. The basic trend will not be halted by viewing the matter as a clash between rival economic points of view. The present confusion in public and private thinking cannot be clarified nor resolved except by a recognition of the fact that the problem is basically not one of economics at all, but one of the philosophy of government and of morals.

The form of government and the morals of a people, in the last analysis, control the kind of economics operating among the citizens. The new economic planners have made us believe the reverse, that economics should shape the form of government and the morals of a people. These planners know full well that they could not possibly impose a planned economy or the morals of expediency merely by talk and persuasion. They must first exercise over the people political and governmental control. They must regiment us politically in order to regiment us economically. The problem, therefore, basically is: what kind of government do the American people want for the next 150 years? Do we want a republic, a constitutional and representative commonwealth, a society of free men and a free economy, a return to thrift and common honesty, or do we prefer the regimentation of some form of statism?

The trends involved and the trends now operating raise the basic issue of the form of government under which we and our posterity are to live. Restore the Constitution and its guarantees of liberty and property; preserve liberty under law and the rights of the states against centralized power; restore free markets for goods and money; prevent monopolies wherever they exist, public or private; and the national income will then enable us to pay our huge debt with honest dollars, and we may again set ourselves on the road to such achievement and general well-being as will once more astonish the world.

Our generation is not to find new lands or conquer the forests and the plains by warring with savage men or savage beasts, nor are we to build a new nation as did our forefathers. Our task is to maintain and preserve, for our children and our children's children, the great heritage bestowed upon us. It is to uphold and defend this great heritage against all persons that would undermine it from within, and against all forces that would challenge it from without. This is to imitate the virtues of our forefathers and to make our day, at least in part, as glorious as theirs.

All-Electric Kitchen Program

(*Continued from page* 42)

sure selling tools. They can be employed as part of an aggressive sales drive by any electric utility—or, where the company may so desire, they can be used to presell the local market, to pave the way for active selling when the company is ready for such activity.

Electrical manufacturers will be encouraged to use the theme, "Of Course —It's Electric" in their national advertising, and to give it the widest possible exposure in their individual sales efforts. The "Digest" and the other promotional aids can be used effectively by manufacturers, distributors, dealers, contractors and others concerned with the sale of electrical appliances. The educational approach stressed in these materials will increase the appeal of individual brand advertising and will contribute to easier, more profitable sales.

Thirty-Five EEI Resuscitation Medals Presented for Quick, Effective and Unselfish Actions of Power Company Employees

(*Continued from page* 57)

former wire, and the circuit began arcing from his hand to his chest.

Fostner grabbed Nelson's shoulder to pull him clear and received a shock. Then he noticed the flash of electricity flowing from the fountain pen in Nelson's shirt pocket to his hand, across his chest. Engineer R. C. Straub answered Fostner's call for help and, using rubber gloves, jerked the wires from Nelson's hand, clearing him from the circuit.

Nelson was unconscious and had ceased breathing when Elmer Process, maintenance man, began, a minute later, to use the prone-pressure method of artificial respiration. Another minute elapsed before Nelson showed signs of life. Artificial respiration was continued for 15 minutes with the aid of maintenance man Roy C. Chappelle until breathing became more regular. Then oxygen was administered intermittently by the Fire Department rescue squad, which had been summoned. The injured man was removed to a hospital where 3rd degree burns of both index fingers and thumbs, right thigh and left chest were treated and dressed. Nelson was well enough to be discharged from the hospital on the following day.

At presentation ceremonies in Green Bay, Wisc., on April 26, 1948, Elmer Process received the Edison Medal and Roy Chappelle and R. C. Straub, Certificates of Assistance from E. C. Kohlhepp, President of the Wisconsin Public Service Corp.

A Practical Plan for the Establishment and Perpetuation of Meter Reading Routes

By F. A. Fussner

Staff Accountant, Puget Sound Power & Light Co.

Digest of a paper presented before the Northwest Electric Light & Power Association, Accounting & Business Practice Session Conference, Spokane, Washington, May, 1948

ONE of the many requisites of present-day utility operations is to simplify and improve the daily work of its meter readers. This may readily be accomplished by the intelligent use of numbers to identify both area and service location when used in conjunction with especially prepared maps to provide accurate and readable travel information.

The inauguration and continued use of such a system will produce many recurring economies.

The success of the plan is predicated on: (1) The assignment of sufficient responsibility with comparable authority for its establishment and perpetuation; (2) Complete understanding of the plan by all employees using it; (3) Building maps and setting up street and avenue guides with care; (4) Issuance of detailed instructions and permitting no deviation that has not been incorporated in the instructions.

This plan recognizes two classes of area. (1) Urban: That area where paths of travel are named or numbered and where locations have been assigned a fire number (house number) and where such names and numbers *are in actual use*. This area is usually within the corporate limits of cities and towns and in the densely populated districts immediately adjacent thereto. (2) Suburban: All other area not embraced in urban.

1	2	3	4	5	6	7
Utility	Operating Division	Suburban Office	County	Suburban Area	Incorporated Cities & Towns	Reservation of Route Numbers both inclusive
0						1 to 999
	1					1 to 400
		11				1 to 150
			111			1 to 150
				111		1 to 90
					1111	91 to 110
					1112	111 to 130
					1113	131 to 150
		12				151 to 400
			121			151 to 400
				121		151 to 300
					1211	301 to 350
					1212	351 to 400
	2					401 to 999
		21				401 to 550
			211			401 to 500
			212			501 to 550
		22				551 to 800
			221			551 to 670
				221		551 to 640
					2211	641 to 670
			222			671 to 800
				222		671 to 750
					2221	751 to 800
		23				801 to 999
			231			801 to 850
			232			851 to 999
				232		851 to 950
					2321	951 to 999

Fig. 1—Route Number Reservations

Route or Unit Numbers

These numbers are composed of from one to four digits depending upon the size of the utility and the number of routes required. The use of four digits will provide a maximum of 9,999 route number reservations. The reservation and assignment of route numbers covers the utility's entire area both urban and suburban. Reservation in blocks of numbers should be divided so as to identify geographical area and all sub-divisions. For example: (1) Operating divisions or districts of the utility, (2) Suburban, branch, reporting or cash offices, (3) States, (4) Counties, (5) Incorporated cities and towns, (6) Unincorporated area, (7) Any other fractional divisions desired.

The above diagram, Fig. 1, outlines the method of route number reservation for a utility with less than 100,000 customers. In this example route numbers are composed of from one to three digits providing a possibility of 999 routes. This utility serves an area with two operating divisions, five suburban offices, eight counties, and eight incorporated cities and towns. The numbers appearing in columns 1 to 6 serve only to indicate the line of jurisdictional progression. Any number assigned from the block 951 to 999 would be identified as in an incorporated city, No. 2321, in county No. 232, under the jurisdiction of suburban office No. 23, and in operating division No. 2.

This positive identification facilitates the accumulation of customer statistics such as meter count, customer count, electrical energy, gas, or water delivered, and the revenue recorded by incorporated cities, counties, states, company offices and divisions. The actual assignment of route numbers from the reserve blocks are so spaced as to leave numbers in close proximity for future use. The number of meter reading routes to be created may readily be determined by proper consideration of the following factors:

1. Total number of customers served.
2. Geographical area covered.
3. Jurisdictional boundaries.
4. Meter reading.
   - A. Reading period, Monthly, Bi-Monthly or other.
   - B. Year-round climatic conditions.
   - C. Topography.

D. Accessibility of meters to meter readers.
E. Riding or walking route, or combination of both.
F. Travel time from and return to headquarters.

5. Method of obtaining meter readings.
A. Full time, straight meter readers.
B. Combination meter reader-collectors.
C. Part-time meter reading such as servicemen, on-and-off men, local or resident managers, agents, etc.

The method used to reserve and assign account numbers is different for urban and suburban areas, likewise the method of reading progression also differs.

A convenient size for map sheets is 18 inches wide by 20 inches long with top binding. This will provide space for 4 sections of ground area with an 8-inch-to-1-mile scale and 1 section of ground area with a 16-inch-to-1-mile scale. The latter scale is generally used in densely populated areas.

Suburban Area Maps

These maps should be built by transcription of standard map markings from any standard map available. It must be remembered these maps are built for a specific purpose and should therefore include standard information, i.e., range, county and section lines, boundaries of incorporated cities and towns, roads and railroads (in actual use), all bodies of water, the boundaries of golf courses, cemeteries, airfields, parks, etc.

To this the following special markings may be added as they apply: Account number, backtrack identification, division or district jurisdictional boundary lines, docks and landings, map identification letters, marginal letters and numbers for map association, meter locations other than service location, route number, starting point for meter reading, service location and trails or foot paths.

After maps have been prepared, field checking and spotting of service locations can be undertaken. When all locations have been spotted, route boundaries and account numbers can be assigned irrespective of the number of accounts embraced within a route. The full scope of 9,999 numbers should be used. For example, a route with 200 accounts, if evenly spaced, would permit a skip of 50 numbers per customer. Reading progression should be predetermined in a general compass direction. Meters are read on both sides of roads unless the road is a route boundary.

All maps are numbered, and the number is composed of the component parts identifying the area, which are taken from standard map markings. For example, the Northeast 4 sections of Township 26 N, Range 5E would be numbered NE

———, the letter A identifying sections 26-5-A
1, 2, 11, and 12 (as a group).

Established routes can be divided when they become too large by simply determining a dividing boundary and assigning a new route number to one portion, account numbers remain as originally set up.

Master Map

Regardless of the accuracy of the original work, maps will soon lose their value if additions and corrections are not made promptly and accurately. One complete set of map sheets should be provided and labeled "Master Set." This set should be used to record additions and/or changes and they should be recorded in red. The most common additions will be new account numbers, new roads and highways. Additions can be provided by meter readers, servicemen, meter setters and others. By using a transparent paper an actual tracing can be made of a small portion of a map sheet to indicate such additions or changes. With the changes recorded in red, a glance at any map sheet will indicate if the additional material should be transferred to the original negative and new prints made.

A small scale master map covering the entire area of the utility (or by operating divisions) can be prepared and used to spot the approximate locations of each route. A route location can be determined and identified by using intersecting points of marginal numerals and letters.

Urban Area—Street and Avenue Guide

A street and avenue guide serves the same purpose as the suburban area map sheets for account number reservation and assignment. This guide should provide space for every possible location within a city or town and the additional area covered. A preprinted sheet 11 by 14 inches with columnar provisions for 5 blocks on each side or 10 blocks per sheet will be found adequate for most city layout possibilities.

A city directory will be advantageous in determining the number of streets, avenues, etc., covered in the area under question. It will also indicate the number of blocks for each and the minimum and maximum length of such blocks. If provision is made for account number assignment for each 20 linear feet it will be ample. Those streets, avenues, etc., having less than 4 blocks in their entirety should have the name of the street, avenue, etc., shown directly over the vertical columns to be used. Otherwise the name should be shown in the upper right corner of the page.

Guide sheets should be set up for all streets, avenues, etc., with a provision of one column for each block. When properly labeled the sheets should be secured in a binder in the following order: streets, avenues, etc., numerically designated, followed by alphabetic designations, both groups in the following order: street, avenue, alley, court, drive, lane, place, way. Any other designations not here enumerated but in use, should be placed in the proper alphabetical order following avenue.

The compass order for all groups to be as follows: first, no directional location; second, north; third, northeast; fourth, east; fifth, southeast; sixth, south; seventh, southwest; eighth, west; ninth, northwest. This follows the compass in clockwise order following north.

The preprinting of numerals from 0 to 9 both inclusive, repeated 7 times in each column of the guide sheets provides for the assignment of 70 numbers per block, 35 on each side of the street. On the basis of 20 linear feet per fire number, this covers a block 700 feet long. If longer blocks are encountered an additional column may be used. The entire scope of account numbers 9,999 will provide for 19 miles of directional travel within a route, which is more than ample.

Before actual account number assignment, each column of the guide sheet should have the block number indicated at the top by prefixing the first part of the block number to the printed zero. For example, prefix 390 to zero to indicate the 3900 block. An indication of the largest possible number in the block should also be shown in the proper place in the column. This will eliminate the assignment of account numbers or impossible fire numbers.

Maps of Cities

A standard map should be provided for each city or town covered and it

should be of a scale which will permit accurate location identification. From knowledge of the present route area and number of customers embraced therein, plus due consideration of the guide points used in suburban route boundary set-up, it will be possible to establish new route boundaries. Whenever possible the boundary should follow the center of streets, avenues, water courses, railroad tracks, etc. However, in many instances it may be expedient to use alleys entirely. After assignment of new route boundaries and route numbers to the city map, the guide sheets should be similarly identified.

Account Numbers

Account numbers should now be set up for each route. The assignment of account numbers should be from start to finish on the basis of 1 to each 20 linear feet in the order of the sheets as they are placed in the street and avenue guide. Account numbers will therefore be numerically consecutive from 1 on up, being composed of from 1 to 4 digits with a maximum of 9,999 per route.

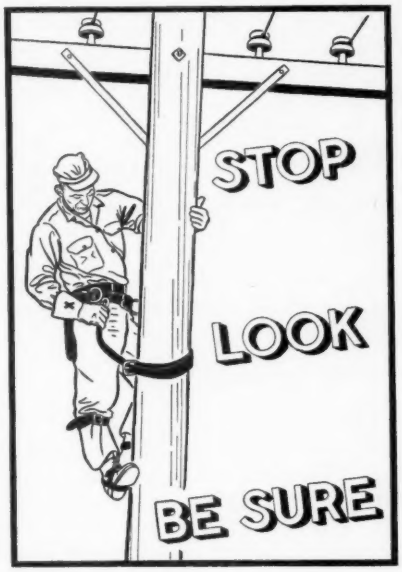
In highly congested areas such as apartment house districts, large office buildings, etc., it will be found that there are more accounts (customers) than one per fire number. When more than one account exists at a fire number or where half numbers or rear locations are used, such accounts will nevertheless be identified by the account number assigned to the fire number but will be further identified by the use of a dash-number composed of 1 or 2 digits, 99 possible per fire number. In such cases an asterisk will be placed opposite the regular account number on the street and avenue guide sheet in a column provided for this indication. Such dash numbers should be listed separately on a supplemental guide sheet provided for that purpose.

It is believed that assigned fire numbers never cover more than 60 front feet and 99 dash numbers will be found sufficient in the large majority of cases. However, very large office buildings and possibly some apartment houses may contain more customers than 99. But such buildings also cover more than 60 front feet and consequently encompass more than one fire number although the building may be identified by and use only one such fire number. The additional fire numbers within the scope of the building area may be used to obtain the required number of dash numbers.

Three Accident Prevention Posters Now Available

THREE brightly colored posters stressing important safety rules for linemen in the electric light and power industry, the first of a proposed series, are being offered by the Edison Electric Institute in a campaign to reduce accidents in electric line work.

Bold, black lettering against a yellow background gives the posters high visibility and legibility at considerable distance. Each of the posters is 8½ by 11 inches in size. The drawings themselves feature easily recognizable scenes of daily operations confronting electric utility linemen. They emphasize what the EEI Accident Prevention Committee, sponsor of the poster campaign, has found to be the best procedures to prevent accidents resulting from: linemen cutouts; inadequate use of rubber protective equipment; and the careless use of pole-climbing equipment.



Two of the three Accident Prevention Posters now available are shown on this page as line drawings.

Additional posters in this series on accident prevention are to be prepared and released periodically if a reasonable demand for them continues to develop. Each of the posters may be ordered from the Edison Electric Institute, 420 Lexington Avenue, New York 17, N. Y., at the following prices: 1 to 9 copies, 8 cents each; 10 to 99 copies, 5 cents each; and 100 or more copies at 4 cents each.

Meter Reading

Meter reading in the urban area has an advantage over the method outlined in the suburban area for the reason that the reading progression may be changed from month to month without rearranging sheets or changing account numbers. This may be accomplished by the use of reading codes. The account number of the first account to be read should be shown on a fly or information sheet in the front of the meter book. Reading progression will be in account number order from this point on until a change is desired. The account number of the next account to be read (code number) is to be placed in a designated place on the meter sheet of the last account read in regular progression. Then the reading is in account number order again until the next code appears.

Space does not permit the printing of the entire plan including examples and exhibits. Those interested may obtain a copy of the complete presentation by addressing Mr. J. H. Clawson, Treasurer, Puget Sound Power & Light Company, 860 Stuart Building, Seattle 1, Washington.

Accident Prevention Committee Meeting

E. J. Kreh, *Chairman*

THE fortieth meeting of the Accident Prevention Committee was held on Jan. 24 and 25 at the Book-Cadillac Hotel in Detroit with 60 members and guests in attendance.

In an address of welcome, J. W. Parker, President of the Detroit Edison Co., emphasized that the elements of a successful safety program can be summarized in the term of good discipline. This includes skill, planning the job in advance, orderly procedure and most important of all, a healthy mental attitude and spirit of cooperation.

Sample Accident Experience Data

W. F. Brown presented sample accident experience data for the last half of 1948 which indicates moderate improvement over the corresponding period in 1947. Following is a summary of this data based on reports from 29 companies represented on the Accident Prevention Committee and comprising over 40 per cent of the total manhours for the entire industry.

	Last Half 1948	Last Half 1947
Manhours	114,777,628	105,649,429
Fatalities	20	25
Frequency Rate	13.16	13.65
Severity Rate	1.46	1.72

H. F. Webb reported completion of collection of data on handling, storage and transportation of poles. A subcommittee has been appointed to condense and summarize this material.

A. H. Doud announced the release of the first three of a new series of industry safety posters sponsored by the Committee. Additional posters are to be prepared and released periodically if a reasonable demand for the series develops.

Lost-Time Accidents Study

The results of a study of 952 lost-time accidents occurring in steam generating plants during the five-year period 1943-1947 were presented by F. G. Harriman. Boiler rooms accounted for 438 cases, coal handling 229, turbine rooms 164 and ash handling 111. Distribution with respect to the age of the injured was surprisingly uniform. However, 11 per cent of the accidents occurred to employees with less than six months service with the company and over 40 per cent occurred to those with less than three years service. The average time lost was 25 days and 42 per cent of the cases involved the loss of one week or less. Back, body and shoulder sprains accounted for 109 cases and there were 104 cases of arm, hand or finger bruises, cuts and lacerations. By far the largest single cause of accidents was inattention to hazard, which accounted for 30 per cent of the cases. Men struck by falling, flying or rolling objects was the most frequent type of accident and the use of air lances, soot blowers, ash sluicing devices, tube cleaners and fire bars was the class of work most frequently involved. Job operations most frequently involved in steam generating station safety will form the basis for a proposed sound-slide film.

Live Line Tool Survey

P. L. G. Hasskarl summarized the results of a survey on the use and care of live line tools and reported progress in the preparation of the proposed manual on this subject. Eighty-two out of 93 companies covered in the survey use live line tools. Seven of these use live line tools on conductors and equipment below 5000 volts. Canvas rolls in line trucks, special tool boxes in line trucks and special trailers are used about equally by these companies. The majority reserve special ropes and blocks for hot line tool jobs and use regular line crews for this work.

"Tremendous Trifles"

A. L. Dowden of the Liberty Mutual Insurance Company presented a new sound-slide film, "Tremendous Trifles," showing examples culled from Committee records where trivial faults in equipment and procedure have resulted in fatal accidents.

Proposed revisions of ASA specifications for linemen's rubber protective equipment were described by I. R. Dohr.

The twelfth in the series of Exchange Bulletins edited by G. J. Ruoff described unusual accidents resulting from induced voltage, failure to deenergize a 214-kv circuit before grounding, stepping inside the guard rail of a moving coal conveyor, starting a slipping drive belt by hand, rolling a heavy manhole cover, inadequate use of line hose and hoods, failure to use line hose connectors, failure to cover secondaries, premature removal of "men at work" signs and failure to wear rubber gloves when within reach of energized lines and equipment on poles and in substations.

Round-Table Discussions

Round-table discussion conducted by J. G. Dickinson covered numerous subjects. In connection with the collection of gas in cable conduit the need was expressed for information on the effects of propane and butane in combination with regular manufactured gas. Grounding chains still are used by several companies but only as a preliminary measure prior to the application of clusters. Several cases of severe cracking of the leather and failure of the stitching on the inner surface of linemen's safety straps were reported. In two cases rivets holding the safety snap in the buckle have come out. There was considerable discussion of the desirability of requiring rubber gloves to be put on before starting to climb rather than at a point on the pole just below reach of energized lines. E. E. Beck pointed out that the latter rule has added value because this establishes a desirable habit of pausing just before entering the primary area.

Safety Through Organized Control

A feature of the second day was an address by F. W. Bagnall, Superintendent of the Overhead Lines Department of the Detroit Edison Co., entitled "Accident Prevention Through Organized Control." He described how safety has been integrated throughout the line organization resulting in steady reduction of the accident frequency rate of the overhead lines department to 6.6 for 1948. All levels of supervision are given a 60-hour course to equip them as trainers. The lineman's trade has been analyzed and broken down into over 400 job units in which safe practices and safety warnings are incorporated as a part of standardized procedures. A zone control of inspection has been developed whereby an estimator is assigned a definite territory and watches for all unsafe conditions in his area.

E. S. Miner of the American Telephone and Telegraph Company stated that safety is integrated into the staff and line organization of the Bell System in a manner similar to that described by Mr. Bagnall and that this produced the fifth consecutive new low annual accident frequency rate for the Bell System in 1948.

PERSONALS

BAYARD L. ENGLAND has been elected president of the Atlantic City (N. J.) Electric Co. to succeed Philip Sporn, president of the American Gas & Electric Co., who has retired as head of the New Jersey utility. CHARLES M. HAGAN of Longport, N. J., has been elected vice president and ALBERT C. GOEBEL, secretary-treasurer.

Mr. England started with the Atlantic City Electric Co. as a clerk in the distribution engineering department in 1923. Subsequently he served as manager of the central division at Ocean City, commercial manager and assistant general manager, and then as vice president and general manager. Mr. England is vice president of the New Jersey Utilities Association.

Mr. Hagan joined the company in 1928 as a power sales representative. In 1941 he was made manager of the company's River division with headquarters in Salem, N. J. Five years later Mr. Hagan went to Atlantic City as assistant general manager.

Mr. Goebel joined the company 39 years ago as an office boy. For many years he held the position of general office manager. Mr. Goebel is treasurer of the New Jersey Utilities Association.

Announcement has been made of the election of GEORGE H. GROH as vice president in charge of operations and of JOHN T. KIMBALL as a vice president of the Central Arizona Light & Power Co., Phoenix.

Both men will continue with essentially the same duties that they formerly performed. Mr. Groh, who has served as chief engineer and general superintendent since 1945, will continue to have charge of the operations of the company's electric generation, distribution, transmission and natural gas facilities. Mr. Kimball has served as assistant to the president since 1947.

After joining the Calapco engineering staff in 1929, Mr. Groh progressed steadily through the engineering, sales, operating, maintenance, and construction departments. Before going to Arizona, he spent six years as an engineer with the West Penn Power Co.

Mr. Kimball joined Calapco in 1946 as manager of research and development, the position he held until his appointment as assistant to the president. Before going to Phoenix, he served 12 years with the Mississippi Power & Light Co. in numerous capacities, including residential sales manager, sales promotion and advertising manager, assistant operating manager, personnel manager, and manager of the company's offices in Jackson.

GEORGE A. PORTER has been appointed chief engineer of power plants of the Detroit Edison Co. Mr. Porter became identified with the Detroit utility in 1925 and has been assistant chief engineer of power plants since 1947. HENRY E. MACOMBER has been made assistant chief engineer and WILLIAM W. BROWN mechanical engineer of power plants.

Before being made assistant superintendent of the Delray power plant, Mr. Porter was a maintenance man, foreman and maintenance engineer in the company. He has worked in the research, construction and production departments.

Mr. Macomber has been in the production department since 1917, and Mr. Brown has been connected with the construction and production departments since 1923.

C. H. SILVESTER, Port Huron (Mich.) district manager for the Detroit Edison Co., has retired after 48 years of service. When the company began serving areas beyond Detroit, Mr. Silvester in 1915 was among the first of the outlying district agents. His successor, ARTHUR L. LANE, has been assistant district manager at Port Huron since 1940.

BENJAMIN BENNETT has been elected assistant secretary of West Penn Power Co. by the Board of Directors.

Mr. Bennett started with the company as a mail messenger in 1924. In March, 1927, he became a clerk in the accounting department and remained there until February, 1946, when he was appointed assistant to the secretary of the company.

At the time of his 1946 transfer, he was assistant chief clerk of general accounts. During 1944 and 1945, Mr. Bennett was special assistant to the controller.

After attending McDonald High School, Mr. Bennett completed studies in accounting and law at the Robert Morris School of Business in Pittsburgh. He has also taken special work at the University of Pittsburgh.

A. N. PRENTICE has been appointed assistant to the vice president and general manager of the Ohio Power Co., and R. W. OSTERHOLM was appointed to succeed Mr. Prentice as managerial assistant, it has been announced by Harold Turner, vice president and general manager of the company at Canton, Ohio.

Mr. Prentice has been associated with Ohio Power Co. since 1928 in various capacities. In 1934 he was named assistant general meter superintendent and in 1940 became head of the general engineering department. He has been managerial assistant in the office of the vice president since 1946. Prentice is the author of a meter course which is now used in schools as a standard text book.

Mr. Osterholm joined the Ohio Power in 1924. He has served as a power engineer, commercial-industrial manager and since 1944, has been industrial agent for the company. For the past three years he has been chairman of the Industrial Development Committee of the Ohio Chamber of Commerce.

The appointment of L. A. BRETTNER, as executive assistant, has been announced by Ashton B. Collins, President of Reddy Kilowatt Service, New York City.

Mr. Brettner, who will report to Mr. Collins and General Manager Fred Holz, has a wide background in public utility advertising, starting in the industry in 1932 in the advertising department of the Pennsylvania Power & Light Co. at Allentown. In 1940, he became advertising manager of the United Illuminating Co. at New Haven, Conn. After seeing service in the army, he joined the J. M. Hickerson Advertising Agency as account executive on the EEI Planned Lighting Program in 1947.

MALCOLM MORRISSON, assistant to the president of the Oklahoma Gas & Electric Co., Oklahoma City, has been elected president of the Oklahoma Utilities Association.

Mr. Morrisson has been in the electric utility business since 1934. Before joining the staff of Oklahoma Gas &

Electric, he was vice president and trust officer of the American National Bank at Bristow.

Mr. Morrisson is widely recognized as an authority on municipal affairs.

Other officers elected include D. W. REEVES, Oklahoma Natural Gas Co., Tulsa, first vice president; C. N. ROBINSON, Public Service Co. of Oklahoma, Tulsa, second vice president; H. H. FERRIN, Oklahoma Gas & Electric Co., treasurer; and KATE A. NIBLACK, who was re-elected secretary.

DONALD H. MACKIE, northern division advertising manager for the Commonwealth & Southern Corp. at Jackson, Mich., has been made head of the company's public information and stockholders' report department with headquarters in New York.

GEORGE B. FOSS, senior substation engineer, engineering and construction department, Alabama Power Co., who recently retired under the company's pension plan, has left for Seoul, Korea. The aid of skilled engineers has been enlisted by the civilian affairs division of the U. S. Army to assist Koreans to man important positions in the operation of electric light and power systems. Mr. Foss expects to be engaged in this work in Korea for a year.

NORMAN K. JACOBSHAGEN has joined the Kansas Gas & Electric Co., Wichita, as sales promotion and advertising manager. In the 1930's Mr. Jacobshagen was connected with Kansas Gas at Independence and Wichita, leaving to serve as a flight instructor. Some time ago he re-entered the sales and advertising field with McCormick-Armstrong, his latest connection.

EDWARD T. STEEL, research engineer and head of the research department of Potomac Electric Power Co., has retired after sixteen years with PEPCo.

Mr. Steel's electric utility career began shortly after his graduation from MIT as an electrical engineer, when he entered a division of Stone and Webster. After serving in various capacities with Stone and Webster firms in Puerto Rico and Savannah, Georgia, as well as in the home office in Boston, Mr. Steel became a division manager of Puget Sound Power and Light Co. in 1924. He joined Potomac Electric Power Co. in 1932 to do rate schedule work, and shortly thereafter formed PEPCo's research department. For ten years he has been an active member of the Load Research Committee of the AEIC.

SAMUEL STITES, vice president and Akron Division manager of the Ohio Edison Co., has been elected preside of the Akron Chamber of Commer for the year 1949. Mr. Stites had be a trustee of the Chamber for seve years. Last year he served as vice pre dent of the Chamber.

CONVENTIONS AND MEETINGS

1949

FEBRUARY

7-8 Prime Movers Committee, EEI, Biltmore Hotel, Dayton, Ohio.
10-11 Transmission and Distribution Committee, EEI, Netherland Plaza Hotel, Cincinnati, Ohio
13-15 Industrial Relations Committee, EEI, Chicago, Ill.
14-15 Electrical Equipment Committee, EEI, New Jefferson Hotel, St. Louis, Mo.
17-18 Pennsylvania Electric Association, Electrical Equipment Committee, Relay Subcommittee, Roosevelt Hotel, Pittsburgh, Pa.
24-25 Pennsylvania Electric Association, Transmission and Distribution Committee, Benjamin Franklin Hotel, Philadelphia, Pa.

MARCH

2 American Society for Testing Materials, Spring meeting, Edgewater Beach Hotel, Chicago, Ill.
3-4 Pennsylvania Electric Association, Electrical Equipment Committee, Benjamin Franklin Hotel, Philadelphia, Pa.
9-11 American Transit Association, Operations Division, Chase Hotel, St. Louis, Mo.
13-18 National Electrical Manufacturers Association, Winter Convention, Edgewater Beach Hotel, Chicago, Ill.
17-18 Industrial Relations Committee, EEI, Baltimore, Md.
17-18 Oklahoma Utilities Association, Hotel Tulsa, Tulsa, Okla.
24-25 Southeastern Electric Exchange, Engineering and Operation Section, General Oglethorpe Hotel, Savannah, Ga.
29-Apr. 1 Third International Lighting Exposition and Conference, Stevens Hotel, Chicago, Ill.
31-Apr. 1 Pennsylvania Electric Association, Communications Committee, Hotel Brunswick, Lancaster, Pa.

APRIL

5-7 Fifteenth Annual Sales Conference, EEI, Edgewater Beach Hotel, Chicago, Ill.
6-8 Missouri Valley Electric Association, Engineering Conference, President Hotel, Kansas City, Mo.
11-14 National Conference of Electric and Gas Utility Accountants, Book-Cadillac Hotel, Detroit, Mich.
11-14 National Association of Corrosion Engineers, Netherland Plaza Hotel, Cincinnati, Ohio
13-15 Southeastern Exchange, Annual Convention, Boca Raton Hotel, Boca Raton, Fla.
19-21 American Institute of Electrical Engineers, South West District Meeting, Baker Hotel, Dallas, Texas.
20-23 American Society of Civil Engineers, Oklahoma City, Okla.
25-26 Pennsylvania Electric Association, Accounting Conference, Pittsburgh, Pa.

MAY

1-6 National Electrical Wholesalers Association, Netherland Plaza Hotel, Cincinnati, Ohio.
2-4 Engineering Committees, EEI, Edgewater Beach Hotel, Chicago, Ill.
2-4 American Society of Mechanical Engineers, Spring Meeting, Hotel Mohican, New London, Conn.
2-5 Chamber of Commerce of the U. S. A., Washington, D.C.
9-11 Purchasing and Stores Committee, EEI, Jefferson Hotel, St. Louis, Mo.
9-12 Westinghouse Agent-Distributors Association, French Lick Hotel, French Lick Springs, Ind.
16-19 National Fire Protection Association, Fairmont Hotel, San Francisco, Calif.

JUNE

May 31-June 2 ANNUAL MEETING, EDISON ELECTRIC INSTITUTE, Atlantic City, N. J.
2-4 American Institute of Electrical Engineers, Summer General Meeting, New Ocean House, Swampscott, Mass.
20-21 Public Utilities Advertising Association, Netherland Plaza Hotel, Cincinnati, Ohio
22-25 Hydraulic Power Committee, EEI, Shirley Savoy Hotel, Denver, Colo.
28-30 Canadian Electrical Association, Banff Springs Hotel, Banff, Canada

JULY

12-14 American Society of Civil Engineers, Mexico City, Mexico.

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(Terms Expiring 1951)

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J. E. LOISEAU.....Public Service Company of Colorado, Denver, Colo.
PAUL B. MCKEE.....Pacific Power and Light Co., Portland, Ore.
C. B. MCMANUS.....Georgia Power Co., Atlanta, Ga.
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EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

(Continued)

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